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TRANSACTIONS

OF THE

PHILADELPHIA OBSTETRICAL SOCIETY,

FROM

OCTOBER, 1897, TO OCTOBER, 1898,

WITH COMPLETE INDEX.

PUBLISHED BY

THE AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL.

NEW YORK.

1898.

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TRANSACTIONS

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A CLINICAL STUDY OF TWO UNIQUE CASES OF ABDOMINAL SECTION.*

I.—Duplication of Right Ureter. II.—Fibroid Spleen—Splenectomy.

By Anna M. Fullerton, M.D., Philadelphia.

The cases I desire to report upon this occasion may, I think, be properly regarded as unique, as they both presented anatomical conditions which I had never met with before, and which a study of the literature of the subject leads me to think quite rare.

Case I. presented a complete duplication of the right ureter, which was discovered by its accidental division during the performance of an operation for double pyosalpinx and ovarian abscesses. Resection of the ureter was necessitated, with implantation of the distal end of the bladder.

The patient's convalescence was without event. A sketch of her clinical history is as follows: R. L., American, aged thirty-six, had been married fourteen years and had six children, the youngest two years of age. Her labors were reported as normal, although she suffered from serious lacerations.

I saw her first in February, 1897, at her home, Riverside, N. J., in consultation with Dr. Weeks, her family physician. She had been confined to bed since the preceding September with repeated attacks of pelvic peritonitis; and a few weeks before her physician had opened for her a large ischio-rectal abscess which still required draining and packing. Her general condition had been much affected by her illness. A pelvic examination proved the condition to be one requiring a speedy abdominal operation. The patient was removed to the Woman's Hospital in this city, and on

* Read. For *Discussion*, see page 7.

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March 10 I performed the operation. As was to be expected from the history of the case, dense adhesions existed, producing a matting together of intestines, omentum, and pelvic organs. Both tubes were occluded and greatly distended with pus and adherent to the ovaries which were also converted into pus sacs. In the enucleation of the appendages of the right side and the separation of adhesions which were exceedingly friable, a fibrous band was severed, through which ran two patulous canals, each of which was the size of a normal ureter. No blood flowed from the open orifices, hence I felt there could not be blood vessels. A long sound introduced into the orifices pssed up in the direction of the kidney without resistance apparently to the pelvis of the kidney. A sound passed through the orifices directed toward the bladder, struck on a catheter which was introduced into the bladder. There was thus no difficulty in determining the nature of the accident and in discovering the abnormality of a double ureter which traversed the pelvis at a higher point than is normal. The two ureters ran side by side and were bound closely together. In the lower portion of their extent they were involved in the general inflammatory condition affecting the pelvic structures.

Ligating the cut ends connected with the bladder, I made an incision in the upper portion of that organ and implanted through it the distal extremities of the divided ureters, using fine silk and catgut sutures. The patient's bladder was kept drained by means of a self-retaining catheter for about ten days following the operation. She made a perfect recovery and returned to her home April 18, 1897.

Dr. Otto Ramsay of Baltimore, Md., reports in the "Bulletin of the Johns Hopkins Hospital" (November and December, 1896), an autopsy in which this same abnormality of the uterer was found, but on the left side. The patient died of exhaustion from carcinoma uteri at the age of forty-five years. Beginning at the hilium of the kidney by separate pelves, between which there was no communication, the two ureters, bound closely together, ran side by side to the bladder, where they entered at distinct orifices, 1.5 cm. apart. They were dilated throughout their whole extent from the point where they were involved in the growth at the cervix uteri to the kidney. Each one was about the size of the little finger. They showed marked contraction where they passed through the growth extending from the cervix. Dr. Ramsay refers to a case reported by Heller (*Deutsch Archiv. fur Klin. Med.*, Bd. V. Heft 2) in which there was a hydro-ureter and hydronephrosis of one portion of a double

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ureter and double pelvis, the dilated ureter ending as a closed sac in the wall of the bladder. A similar case by Weigert (*Virch. Archiv.*, No. 70, p. 490) is also alluded to. Debrine and others have described the condition of reduplication of the ureter, but find it rare. Dr. Elizabeth Bundy, of the Woman's Medical College of Pennsylvania, who has for twelve years directed the work of the dissecting room, has seen but one case of double ureter in that time.

Dr. Frances Van Gasken tells me of a similar case at an autopsy held at the Philadelphia Hospital some years ago.

Case II. was one of splenectomy for a prolapsed spleen which had undergone fibroid degeneration. The case is remarkable because of the perfect clinical history which it offered for an ectopic gestation.

The patient, C. E., was an Irishwoman, forty-one years of age. She had been married ten years, and had but one child about nine years of age. Two miscarriages had occurred since this birth, each at about six weeks' gestation. The patient came to my office about the middle of March, 1897. She had menstruated regularly up to the November preceding. In December she missed her period. On January 17 she had a slight show of blood, and again on February 26, when she had severe colicky pains and passed what she described as "a piece of skin," and her physician who accompanied her to my office said he thought was a cast of the uterus.

On March 15 she again had severe pain, accompanied by a discharge of blood and was confined to bed for two days. The patient thought herself pregnant. Said she had noticed some enlargement of the breasts since January. Colostrum was expressed from the nipples on pressure. The patient was very nervous and apprehensive—almost melancholy.

Upon palpation over the abdomen, a mass of doughy consistency was appreciated just above the pubic symphysis to the left of the median line. By pelvic examination the mass was found to project into the pelvic cavity and crowd the uterus backwards. Bimanual palpation showed that different portions of the mass varied in consistency, there being a portion which was most dependent, and which was as hard as cartilage or bone, while the rest of the mass was soft.

On April 3 I operated upon the case, fully expecting to find a gestation sac and probably a fœtus. After separating the omentum, which was adherent to the tumor and at the pelvic brim, I discovered a dark, bluish-purple tumor containing throughout a portion of the substance an indurated area of ivory whiteness. The

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mass was quite easily lifted from its bed, lying as it did partly in the left iliac fossa and extending downward into the pelvic cavity. It was attached by a very long vascular pedicle to the upper left side of the abdomen. On further examination this tumor was found to be a wandering spleen. The pedicle was twisted and the greatly enlarged vessels in it contained thrombi. After ligation of the pedicle, which required considerable care because of its vascularity, the removal of the tumor was an easy matter. The patient's convalescence was entirely uncomplicated. Her extreme apprehensiveness continued for about three months after the operation, after which she reported herself as vastly improved, and feeling better than she had for years. As we never suspected the tumor in her case to be a prolapsed spleen, her blood was not examined prior to operation. My own impression, however, concerning the case is that the enlargement was primarily the result of malarial hypertrophy, and that the fibroid degeneration resulted from the changes in circulation induced by the disease as well as by the position of the organ.

Acting upon the supposition that the condition was malarial, I placed the patient upon treatment with quinine and arsenic, and her general condition was thus much improved. My reason for considering the condition malarial was the fact that I found the patient had been living for thirty years at 108 Drinker street, a small alley running between Arch and Race and Front and Second streets in this city, where the conditions are anything but hygienic, and where I found others in the neighborhood constantly suffered from malarial fever. I made several efforts to have the patient's blood examined for malarial organisms before putting her upon this treatment, but without success.

This week an examination of the blood was made for me by Dr. Frances C. Van Gasken, who reported the number of red blood cells as 4,025,000, hæmaglobin 78 per cent. and no malarial organisms present. There was no marked change in the number or appearance of the leucocytes. Dr. Marie K. Formad, the pathologist of the Woman's Hospital, made the examination of the tumor for me, taking a section from the dense cartilaginous structure found at the hilium of the spleen.

On August 10, 1890, I made an exploratory abdominal incision in the case of a child eight years of age, whose abdomen was distended by an immense splenic tumor which seemed to fill the entire cavity. The child was in a very weak, emaciated condition, and the

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parents unwilling for any extreme measures for her relief, therefore the incision was closed and healed promptly. In this case, also, the patient came from a malarious region, although there was a history of tuberculosis in the family. This child was placed on antimalarial treatment also, and improved in general health while under observation, but I soon lost sight of her.

At an autopsy performed at the Woman's Hospital in 1893, following an operation done for strangulated hernia, an enlarged prolapsed spleen, weighing eleven pounds, was found occupying the *right* iliac region and crowded down into the pelvis. Here also there was a twisted pedicle, with the history of severe paroxysmal pain. Dr. Roberts reported this case in the "American Journal of the Medical Sciences" for December, 1894.

In the case in which I did splenectomy I believe that the organ had been functionally inactive for some time, and that twisting of the pedicle caused symptoms like those occurring when the pedicle of an ovarian cyst is twisted. It was these severe paroxysmal pains that confirmed the supposition of a threatened rupture of tubal pregnancy. The rapid increase in size of the mass, appreciated both by the patient and her physician, was probably also induced by the excessive congestion resulting from twisting of the pedicle.

Among the reported cases I do not find any answering exactly in description to my own case. Simple and malarial hypertrophy, abscess, simple and echinococcus cysts, sarcoma, syphilis and even tuberculosis of the spleen have been reported, but I find no case of fibroid spleen—that is, when there was so marked a localized change in structure as found in this specimen.

Dr. James P. Warbasse of Brooklyn, who has studied the ancient and modern literature of the spleen most exhaustively, concludes that the leucæmic spleen is absolutely not suitable for operation when the blood-cell ratio is 1 to 50 or worse. He has collected and reported statistics concerning 124 cases of laparo-splenectomy.

Among this number sixty-three died as a result of the operation and sixty-one recovered. Five more died in a short time either from the operation or from a continuation of the disease. This gives a mortality of 54.8 per cent. Warbasse states that there are on record thirty cases of laparo-splenectomy in which investigation of the blood has been made after operation. Nineteen of these are of especial value because in these an exact record of the condition of the blood was made both before and after removal of the spleen. After the operation, in a large number of these cases, there was a

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rapid increase in the number of white blood cells and a diminution in the number of red cells. Zessas and Vulpius made experiments upon healthy animals and found that splenectomy is followed by a rapid increase of more than 100 per cent. in the number of leucocytes within nineteen days after operation. From this high point the number gradually sank till it reached normal on the sixty-fifth day. The number of red cells diminishes 20 per cent. during the first nine days and then gradually increased to normal. J. M. Neel, of Bonham, Texas, reports two cases of successful splenectomy, and outlines the indications and contra-indications, as follows: It is unjustifiable in leucocythemia or when the lymphatic glands are involved, but indicated in tumors, simple hypertrophies or when there are pressure symptoms, causing loss or suppressed function of any other organ, severe paroxysms of pain, or when it is proven rebellious to simple measures and attended with dangerous or serious disability. In movable or displaced spleen requiring interference, he thinks extirpation is preferable to operative fixation. Rydizier, of Krakow, reports in the *Centralblatt. für Chirurgie*, July, 1895, an operation for fixation of a movable spleen performed by himself as follows: He made an incision in the median line of the abdomen and dissected up the peritonæum at the level of the eleventh and twelfth ribs, making a pocket in which he lodged and fixed the spleen and passed the fixation sutures through the gastro-splenic ligament. Up to the time of his report, made three months after the operation, the spleen had remained in place. Another method of fixation described by Plücker, of Cologne and practiced by Bardenheuer fixed the spleen outside the peritonæal cavity in the loose, fatty and connective tissue, just under the diaphragm, the spleen being pushed into the bed prepared for it by a small opening in the parietal peritonæum. The latter is sutured to the serous covering of the pedicle and the communication with the peritonæal cavity thus shut off. The spleen is fixed by threads passed around the tenth rib and through the lower end of the viscus. Sutures may also be used to secure it to the detached fascia and connective tissue below it. Kouwer (*Weiner Klinische Wochenschrift*) reports two cases in which he fixed the spleen by a lumbar wound.

The question of fixation did not arise with reference to the management of my case, as the organ was so manifestly diseased.*

123 S. 16th St.

* For the references concerning the surgery and physiology of the spleen, I am indebted to Sajous' Annual of the Universal Medical Sciences (issue of 1896).

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, October 7, 1897.

The President, E. E. MONTGOMERY, M.D., in the Chair.

A Clinical Study of Two Unique Cases of Abdominal Section.

BY ANNA M. FULLERTON, M.D.

(See page 1.)

DISCUSSION.

Dr. B. F. BAER: I have never met with a case of double ureter, and by a fortunate combination of circumstances I have never wounded one. On one occasion I included a ureter in a ligature but fortunately recognized it before I severed the pedicle. All of the others kept out of my way. I have often wondered why, in the many deep pelvic enucleations that I have been compelled to make, the ureter was not torn. Of course, the explanation is at hand in the fact that the ureter is anatomically placed in a position of great security in relation to the pelvic organs, so that even pathologically this relation and security is maintained in the vast majority of cases. The conditions in which this relation is oftenest destroyed are the deeply burrowing intraligamentary tumors which develop from the hilium of the ovary, and the interligamentary and retroperitonæal fibroids. The method of management of the severed organs is certainly excellent in this case and the result almost more than could have been expected. However, I believe the wounding of the ureter should be regarded as an operative calamity and to be as carefully guarded against as if we did not know that the reported cases had all recovered and done well subsequently. It is to be feared that future trouble might result from narrowing of the calibre of the organ at the point of attachment.

My experience in splenectomy is limited to one case, operated on ten or eleven years ago; but unfortunately I cannot show the patient.

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She died within twenty-four hours from previous exhaustion and from loss of blood at the operation, because of the great intestinal adhesions and large venous supply which could not be controlled. I promised myself when I got through with the operation that I would try to send the next case of that kind to one of my enemies! The organ was many times larger than Dr. Fullerton's specimen and a diagnosis was made before the operation. I do not exactly undertsand why Dr. Fullerton should have made a diagnosis of extra-uterine pregnancy in her case but I suppose I did not attend very closely to the reading of her paper. The diagnostic difficulties are also more vivid in the presence of the case than on paper. Dr. Fullerton i sto be congratulated.

Dr. IDA RICHARDSON: I am very glad to have heard of these two cases and do most heartily congratulate Dr. Fullerton upon the success of both.

Dr JOHN C. DA COSTA: I was so unfortunate as not to hear the first part of Dr. Fullerton's paper. I have never seen a double ureter extending the whole way from the kidney to bladder, the longest seen being about seven inches.

In regard to the second paper, which I heard, I do not wonder that Dr. Fullerton was led astray and imagined the case was extra-uterine pregnancy. We know how these cases of extra-uterine pregnancy vary in symptoms. The patient had a mass in the right iliac region, she had irregular hemorrhages, she had a growing mass, she had the shedding of the decidual membrane of the uterus. These symptoms are those which we are apt to find in extra-uterine pregnancy. I question if either of us had opened the abdomen we would have expected to find other than extra-uterine pregnancy.

A Case of Abnormal Development of the Sexual Organs.

Dr. F. HIRST MAIER: The case I have to report this evening is one of much interest, being of "uterus unicornis sinistra, with absence of entire vaginal canal."

The history is as follows: Mrs. P., aged twenty-nine; family history, as ascertained, good; never menstruated, vicariously or otherwise.

Up to the time of her marriage, seven years ago, patient enjoyed very good health. Immediately after, however, she was taken with intense pains in the lower pelvis, cramp-like in character,

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starting from a point corresponding with the left ovarian region and extending downward and inward to the uterus. These attacks have been recurring at monthly intervals ever since, lasting a week, and being of such severity as to confine the woman to bed. In the intervals she suffered but little.

On examination, the vulva was found to be normal. Below the urethra, and corresponding with the usual situation of the vaginal outlet was a small sacculation. This was probably three-quarters of an inch in depth, and admitted the end of a finger.

The recto-abdominal bimanual method revealed no trace of a vagina.

In the pelvis, more to the left of the median line, where the uterus is usually found, was a mass the size of a large fist. This appeared to be more or less regular in outline, especially to the right, a small furrow at the top apparently being a mark of division of what seemed two parts, the larger of which was to the left. From its appearance I thought it might possibly be a bicornate uterus, with the left half distended by an accumulation of blood.

Before opening the abdomen a horizontal incision was made in sacculated pouch, and the tissue dissected up to the mass with the hope of finding some trace of vagina. There was none. Upon opening the abdominal cavity, it was found that of the mass in the pelvis the smaller part in the median line proved to be a left unicornate uterus; the large mass to the left a tubo-ovarian hæmatoma the size of a small fist.

The sac involved the tubal and ovarian structures, being adherent to the lateral and posterior surfaces of the uterus and the surrounding parts. It was filled with dark, coffee-colored, clotted and fluid blood.

The right half of the pelvis did not disclose the presence of a rudimentary horn, tube or ovary.

The mass to the left of the uterus alone was removed. The uterus was allowed to remain because removal of this organ would have established a communication with the opening below and thus created a possible avenue of infection from the exterior.

The patient made a good recovery, and up to this time, five months since, has been free from pain.

The vaginal opening was not allowed to close. It is two to three inches in depth and lined with epithelium. It seems to serve its purpose very well, as satisfactory coitus is carried out.

This case is one in which there was no development of the Mül-

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lerian duct and ovary on the right side and only incomplete developmen on the left, as was evidenced by the entire absence of any vagina.

The latter feature is of special interest, as it is very unusual for a well-developed unicornate uterus to be unaccompanied by a correspondingly developed vagina.

The attacks of pain at each menstrual period were no doubt due to hæmorrhage into the tumor and probably hæmorrhage into the uterus.

A Case of Hysterectomy for Intraligamentary and Subvesical Fibroid Tumor.

Dr. B. F. Baer: My apology for bringing before the Society this fresh specimen is that the operation for removing it was one involving considerable magnitude in dissection and, although I have met with a good many intraligamentary and retroperitonæal fibroids, I have never met with one exactly like this in location; and, further, because the fresh specimen is a better demonstrator than an older one. In its growth it became a subvesical, intraligamentary tumor rather than post-uterine. It developed and grew downward and forward rather than downward and backward. This made the operation for its removal exceedingly difficult and dangerous to the ureter and bladder.

M., aged forty-seven, had an apparently normal menstrual life up to two or three years ago, when she began to experience an increased amount of flow. About a year ago metrorrhagia occurred and then the hypogastrium was found to be enlarging. The hæmorrhage increased, so that she finally bled continuously but, although the loss affected her health profoundly, it was pressure symptoms which finally drove her to submit to the operation. Vesical tenesmus had become extreme.

I knew from the physical examination that the tumor was located far down in the pelvis and that it was anterior rather than posterior, but I did not anticipate the difficulty I encountered in the operation. The tumor-mass and uterus were covered by the bladder, and you can see, from a distance even, that the specimen is almost entirely denuded of peritonæum. Enucleation was practiced almost from the beginning. It was very difficult to place the ligatures on the ovarian vessels, because it was impossible to draw the tumor through the incision. It was therefore necessary to make the en-

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tire dissection in the pelvis. The steps were, beginning on the left side, ligating the broad ligament as far as I could reach; then attempting to feel the uterine artery, which I finally did, and its ligation. After severing the broad ligament I endeavored to locate the cervix so that I might amputate it and thus reach the other uterine artery, but I could not do this, and from fear of severing the ureter or opening the vagina I began the deep enucleation from the anterior and right side. This required the stripping off of the bladder from its entire cellular connection to the uterus. The enucleation was carefully continued downward and backward, keeping close to the tumor and stripping off all loose cellular tissue. Finally the tumor-mass was released and brought up through the incision, when the right uterine artery was seen to be bleeding freely. This was at once caught and ligated. The cervix was then located and severed. There was considerable venous oozing but it was controlled by pressure. The operation was finished by carefully suturing the peritonæal folds from side to side. After being satisfied that all hæmorrhage had ceased, I closed the abdominal cavity, neither irrigation nor drainage being deemed necessary. The patient was returned to bed in good condition and she is doing well this evening.*

Degenerating Fibroma of Uterus with Pyosalpinx. Hysterectomy.

Dr. Geo. Erety Shoemaker: This case presents several features of interest: Great anæmia from hæmorrhage, old pelvic abscess pointing above Poupart's ligament, recent ischio-rectal abscess, pyosalpinx and fibroid tumor of uterus breaking down; hysterectomy; recovery. The patient, from Altoona, Pa., was single, twenty-nine years old, home employment. Mother died of phthisis when patient was ten years old; a grandmother died of "dropsy." Rather sickly as a child, sweating at night and cough continued for a year after an attack of pneumonia. Menses at twelve years, always with pain referred to rectum. Ten years ago attack of peritonitis, followed by an abscess pointing on the right abdomen above Poupart's ligament, where it was lanced by a physician. The discharge of pus gradually ceased never to return. For four years after this attack patient was an invalid with severe hæmorrhage and pain at monthly periods. Several months ago developed ischio-rectal abscess, followed by fistula in ano, which was operated upon two

* The after history in this case was without event, and the patient made an uneventful recovery, the temperature never rising above 100.8°.

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months before coming under the writer's observation. For several recent months there had been severe flooding at the frequent and irregular monthly periods, so that on the patient's admission to the Methodist Hospital in February, 1897, the hæmoglobin percentage was only thirty-eight. Abdominal pain was constant and often severe. General tenderness of abdomen, most marked on left side.

Examination.—An old depressed scar on the abdomen two inches above Poupart's ligament, where the abscess had drained years before. Firmly attached to this scar is a hard, very tender abdominal tumor, completely filling the right lower quadrant of the abdomen, reaching the navel above and extending two inches to the left of the

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median line. The uterus below is lost in this mass, which is adherent in Douglas' cul-de-sac, a rounded portion pressing down the posterior vagina to within an inch and a half of the outlet. Rectal examination shows a small mass possibly of cheesey material behind the rectal wall, and probably related to an old fistula in ano. The urine was negative.

Diagnosis: Uterine fibroma adherent to old abscess scar in abdomen. The percentage of hæmoglobin, thirty-eight per cent, was considered too low to make justifiable at that time so formidable an operation as hysterectomy would probably be, and consequently seven weeks were spent in preparation for the operation. Under general massage, the administration of iron, and the use during the flooding attacks of a tight vaginal pack (which possibly made pressure upon a uterine artery presenting in the vagina), the hæmoglobin was raised to sixty-two per cent.

Operation.—The bladder and descending colon were densely adherent in front of the tumor to the left, the colon being firmly attached to the pelvic rim in front. After separation persistent bleeding in the colon wall required a suture for its control. On the right side a loop of ascending colon firmly adherent to abdominal wall at site of old scar. General intestinal adhesions about right tube and ovary. It was not possible to determine the origin of the abscess of ten years before, as nothing remained of it except adhesions above the ilio-pectineal line. The right tube had never been ruptured apparently, and contained about one and one-half ounces of greenish yellow pus without odor. It curved backward and downward behind the fibroid, into the cul-de-sac of Douglas and was with great difficulty removed, and then only after the extirpation of the fibroid. Right ovary spread out over the tumor wall very low down. Left tube was buried in very dense adhesions but contained no pus. The left ovary was buried in inflammatory exudate, but was structurally normal and was allowed to remain. The broad ligaments could not be recognized on either side. After ligating on both sides of the tumor and cutting inside the ligatures, the tumor was gradually brought up. The teeth of the heavy hooked-traction forceps applied to the top of the fibroid entered a cavity or area of degeneration in the tumor body in front, from which pus-like fluid oozed during the remainder of the operation. After a very difficult dissection the uterus was freed and cut off at the cervix. Both tubes and the right ovary were afterward removed. The flaps of the cervix were united by suture, the peritonæum closed over it as far as

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possible. Copious irrigation of peritonæum, with normal salt solution, followed. Bag drain of iodoform gauze through the wound, a glass tube above it. Salt solution enema on operating table to lessen shock from loss of fluids. To bed in fair condition.

After-History.—Recovery proceeded steadily. Gauze drain transmitted much serum, the tube little. Last of the gauze removed in five days, the tube in six. Wound aseptic. On thirteenth day some concern was felt because of a rise in temperature to 103° with pain in the abdomen. Immediate relief, however, followed the discharge, through the stump of the cervix, of an ounce or more of reddish fluid, and no further complication occurred. The hæmoglobin at this time was fifty per cent. Five months later the patient writes that health is good. She attends to her household duties. Menstruation continues, owing to the presence of the ovary, which is an advantage in the case of so young a woman.

Specimen.—The tumor, which is now in the museum of the College of Physicians, consists of four chief fibroid nodules, one of which, in the posterior wall, is undergoing expression into the uterine cavity. This was probably the source of the hæmorrhage. The largest nodule is subperitonæal, firm and hard except for an irregular cavity shown at A, two inches in some diameters, containing thick muco-purulent fluid, its walls without limiting membrane. At this point and one other half an inch in diameter near the peritonæal surface the tumor was undergoing degeneration. No communication was discoverable between the uterine cavity and these sacs. The photograph shows the specimen shrunken by months in alcohol. It weighed originally about five pounds.

It may be remarked in conclusion that considering the intense anæmia from hæmorrhage, the presence of pyosalpinx, the areas of degeneration in the tumor itself, the early death of the patient without operation would have been inevitable, and no treatment aside from hysterectomy offered any hope.

Discussion.

Dr. G. E. Shoemaker: I would like to ask some one to give an opinion of the propriety in leaving sound ovary in extirpation of fibroid in a young woman.

Dr. E. E. Montgomery: I should see no reason why there should be any objection to leaving an ovary under these circumstances, and there are certain advantages invariably in the retention of the ovary, even though the uterus be removed, as the influence

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upon the subsequent processes of the individual renders the change of life less rapid, decreases the tendency to severe flushing and other reflex phenomena which occur during the progress of the climacteric, so that it is recognized as good treatment to leave an ovary or part of ovary, even though the uterus and other organs be removed.

Official transactions. FRANK W. TALLEY, *Secretary.*

DISPLACEMENTS OF THE UTERUS FROM THE STANDPOINT OF TREATMENT; WITH SPECIAL REFERENCE TO THE MANAGEMENT OF DISLOCATIONS FORWARD AND BACKWARD.*

BY W. EASTERLY ASHTON, M.D.,

Professor of Gynæcology, Medico-Chirurgical College, Philadelphia.

In considering displacements of the uterus from the standpoint of treatment, we must divide all malpositions into those which are of primary and into these which are of secondary importance. Thus, if a displacement is caused by a tumor pushing or to adhesions pulling or it is associated with a pelvic lesion, then the position of the womb becomes a secondary consideration, and the case, from the standpoint of treatment, is no longer one of uterine displacement.

Viewed, therefore, in the light of this classification, the treatment of uterine displacements narrows itself down to a consideration of only those which are of primary importance.

First. The uterus may be displaced as a whole in an anterior, posterior or a lateral direction. Again, there may be descent or ascent of the organ. All of these displacements, with the exception of the prolapses, are of secondary importance, being due to tumors pushing or to adhesions pulling. They are, therefore, not to be included in those cases of malposition of the uterus which claim our attention as primary conditions.

Second. The uterus may be displaced by version or flexion in

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* Read. For *Discussion*, see page 34.

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an anterior, posterior or lateral direction. These displacements are all of primary importance except the lateral versions and flexions, which are, as a rule, caused by pelvic lesions.

Third. The uterus may be inverted. This form of dislocation of the organ is of primary importance.

We have, therefore, to consider from the standpoint of treatment the anterior and posterior versions and flexions, the prolapses and the inversions of the uterus.

The anterior versions and flexions are never pathological except they cause dysmenorrhœa, endometritis or sterility, or unless they are associated with a pelvic lesion in which case they become of secondary importance.

The treatment of these forms of displacement is dilatation and curettement of the uterine cavity. This operative procedure relieves, in a certain proportion of cases, the dysmenorrhœa, endometritis or sterility dependent upon the displacement.

Posterior displacements, from the standpoint of treatment, must be divided into recent and chronic cases. By recent cases are understood those which have been displaced less than one year. The practical necessity for this division lies in the fact that after a uterus has been displaced for a considerable length of time the tissues and ligaments have become so overstretched, separated and degenerated that it is impossible for them ever to regain their normal contractability and sustaining powers, consequently all forms of local, mechanical and general treatment, which at times cure a recent case, are utterly worthless after these changes have taken place. It is, therefore, apparent, if success is to result from the treatment of posterior displacements of the uterus that the length of time the lesion has existed be taken into consideration.

In the treatment of recent retrodisplacements five points are to be considered:

1. The removal of the cause and the repair of the soft parts.
2. The replacement of the uterus.
3. Keeping the uterus in its normal position.
4. The reduction of the size of the uterus and the stimulation of its ligaments.
5. The general treatment and hygiene.

The Removal of the Cause and the Repair of the Soft Parts.—Under this heading we will mention the cure of a lacerated or diseased cervix or the dilatation and curettement of the uterine cavity for an existing endometritis, as any of these conditions may not

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only be the original cause of the displacement but they may also prevent a permanent cure unless relieved.

Again, all tears in the pelvic floor and perinæum must be repaired so that this portion of the outlet of the pelvis may resume its normal function, as an indirect support to the uterus and upper part of the vagina.

Replacement of the Uterus.—After the causes of the displacement and the injuries to the soft parts of the pelvis have been removed the next step is to replace the organ to its normal position.

Two methods are employed for this purpose, the bi-manual method and the replacement of the uterus in the knee-chest position. The restoration of the organ in the genu-pectoral posture is by far the best method, as the organ will frequently gravitate unaided to its normal position. If this does not occur pressure upon the posterior wall of the uterus with a cotton-mounted forceps, aided by a tenaculum in the cervix pulling the uterus forward toward the vaginal outlet, will swing the fundus clear of the sacrum and allow the organ to fall forward. In a number of cases I have made use of an exaggerated genu-pectoral posture by having the patient elevate the pelvis still higher by resting upon the toes instead of the knees. This position will often cause the fundus to fall forward when the genu-pectoral posture fails to do so.

Keeping the Uterus in its Normal Position.—The uterus is best kept in position with the Hodge or Smith-Hodge hard-rubber pessary, properly adapted to each case. The instrument is best introduced in the knee-chest position, as this posture causes less discomfort to the patient and renders the necessary manipulations easier.

I do not use cotton-wool or gauze tampons to keep the uterus in position. The only possible indication for their use is in cases where the pelvic cavity is too tender to bear the pressure of a pessary. Under these circumstances the displacement is, in most instances, associated with a pelvic lesion and should not, therefore, be considered as malpositions of the uterus.

The Reduction of the Size of the Uterus and the Stimulation of its Ligaments.—The routine treatment to meet these indications is the hot-water vaginal douche and the icthyol tampon.

The injections are given twice daily; on getting up in the morning and on going to bed at night. The water should be as hot as can be borne by the patient, and at least two gallons used each time the injection is given. The object in giving these douches is to ob-

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tain the secondary effect of the heat upon the blood vessels and tissues of the pelvis. The patient should be placed in the dorsal recumbent posture in order that the water may come in direct contact with the vaginal vault and the lower segment of the uterus.

The icthyol tampons are used three times a week. They are made of cotton-wool soaked in a ten-per-cent. solution of icthyol in glycerine. The tampon should be kept in position for twenty-four hours and removed on the following morning.

The General Treatment and Hygiene.—Attention should be given to the general condition of the patient. The bowels must be kept regular, the digestion looked after and such tonic treatment administered as may be indicated in each case.

Careful directions should be given to the patient as to exercise, rest and the care of the skin. It is also of utmost importance that the clothing should be so arranged that the weight of the skirt falls upon the shoulders and not, as is the general rule, upon the abdomen, thus crowding the viscera and pushing the fundus of the uterus back toward the sacrum. In other words, the object sought in the general treatment is to put the patient's health in the best possible condition so that the uterine ligaments may regain their tone along with the general system.

The treatment of a recent case should be persevered with for at least one year. If, at the end of this period, the ligaments of the uterus have not regained their normal sustaining powers, then the case must be regarded as chronic and treated accordingly.

The treatment of chronic retro-displacements of the uterus is operative. The use of a pessary may in some cases effect a symptomatic cure, but the displacement will recur so soon as the instrument is withdrawn. The pessary, therefore, should only be employed when the patient refuses operative measures. It should also be distinctly understood that the treatment is in no sense of the word a radical cure. Adhesions or a tender condition of the pelvis are absolute contra-indications to the use of the pessary.

The operation I advise for the radical cure of chronic retro-displacements of the uterus is ventral attachment. I know of no operation in the whole range of abdominal and pelvic surgery more brilliant in its results. The operation is practically without danger to life and is not followed by any bad results in subsequent pregnancies or labors.

I am well aware in making this statement that it is directly opposed to the views held by many surgeons as is shown by the papers

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and editorials which have lately appeared on the subject. If, however, the statistics upon which these views are based be carefully examined, it will be found that the bad results have been due to a faulty technique and not to the operation. In the first place, a large number of operators do not employ the best technique, and in the second place, some surgeons are careless in mechanical adjustment of parts. Unless the operation be performed with skill and with the proper technique bad results are almost sure to follow. On the other hand,

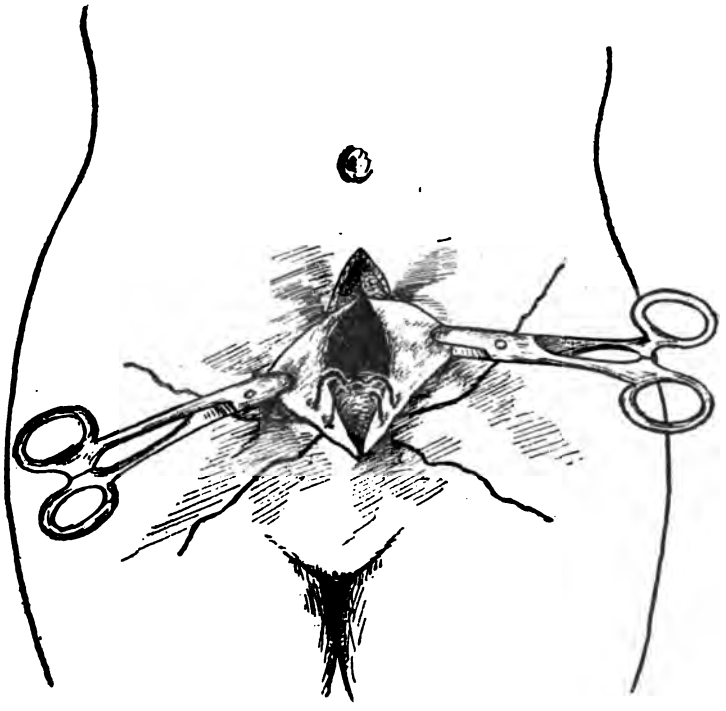

FIG. 1. The Attachment Sutures in position. The Flaps held apart by the Forceps are the Peritonæum.

however, a skilful surgeon, following the proper technique, will never meet with subsequent trouble during gestation or labor.

It is always necessary first to remove all the causes and results of a retro-displacement before doing a ventral attachment. Thus, if the cervix is torn it must be restored to its normal condition so that the uterus may undergo complete involution. Again, all tears in the perinæum or in the pelvic floor must be repaired, so as to give to the

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organs of the pelvis their normal support. Finally, if endometritis is associated with the displacement, the uterus must be thoroughly curetted if the discharge is profuse or purulent.

The operation is divided into six stages, as follows:

1. The abdominal incision.
2. Bringing the fundus of the uterus anteriorly.
3. Introducing the attachment sutures.
4. Introducing the sutures which prevent the stripping of the peritonæum from the abdominal wall.
5. Tying the attachment sutures.
6. Closing the abdominal wound.

1. *The Abdominal Incision.*—The incision through the abdominal wall begins in the median line one inch above the sympysis pubis,

FIG. 2. The Index and Middle Finger of the Left Hand holding the Fundus in position for the Introduction of the Attachment Sutures.

and extends upward for a length of two and one-half inches. This length of incision gives ample room for all the necessary manipulations. If the abdominal wall is fat the incision through the skin and superficial fascia may be made as long as required, but the opening through the aponeurosis must not be over two and one-half inches.

2. *Bringing the Fundus of the Uterus Anteriorly.*—After the incision has been made through the abdominal wall the index and

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middle fingers of the left hand are carried down to the promontory of the sacrum and pushed gently between the uterus and the rectum; the fundus is then pulled forward into its normal position. If the uterus is movable, it is an easy matter to insert the fingers between it and the rectum, but if the organ is adherent the adhesions must be

FIG. 3. The Same as Fig. 1. Looking down from above.

carefully broken up before an attempt is made to pull the fundus forward.

3. *Introducing the Attachment Sutures.*—We are now ready to introduce the attachment sutures. It is important that the needle is of the right size and shape, and that the silk is of the proper thickness. I use a braided silk, No. 7, made by Ellwood Lee & Company, of Conshocken, Pennsylvania. The needle is slender, full half-curved, with a diameter of less than one-half of an inch (see small needle, Fig. 8). Pulling the peritonæum at the lower angle of the incision into the wound, the first suture is introduced about one-half of an inch from its divided edge on the left side. (See Fig. 1.)

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The index and middle fingers of the left hand are now passed into the abdominal cavity, and the fundus of the uterus held in position for the introduction of the suture. (See Figs. 2 and 3.)

FIG. 4. The Four Dots on the Fundus of the Uterus mark the position of the Entrance and Exit of the Attachment Sutures.

The suture is introduced into the fundus directly in the center of the median line dividing the uterus antero-posteriorly (see Figs. 1 and 4). It is buried one-quarter of an inch deep into the uterine tissue, with a distance of about one-half of an inch between the points of entrance and exit. The uterus is now released and the suture

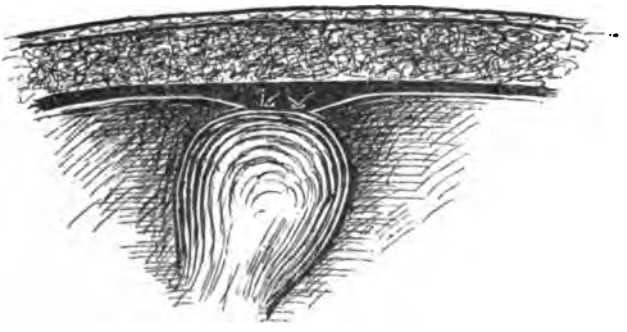

FIG. 5. Showing the Stripping of the Peritonæum.

passed through the peritonæum on the opposite side (see Fig. 1). The second suture is passed through the peritonæum on the left side, one quarter of an inch above the first suture (see Fig. 1). It is then passed through the fundus of the uterus one-quarter of an inch be-

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hind the first suture (see Figs 1 and 4) and then carried through the peritonæum on the opposite side (see Fig. 1).

It is not necessary to hold the fundus in position with the fingers in introducing the second suture as traction upon the free ends of the first suture pulls the uterus securely against the abdominal incision. Both attachment sutures are now in place, and their free ends, on both sides, are grasped with a small pair of forceps to prevent them from becoming tangled.

4. *Introducing the Sutures which Prevent the Stripping of the Peritonæum from the Abdominal Wall.*—This step in the operation is

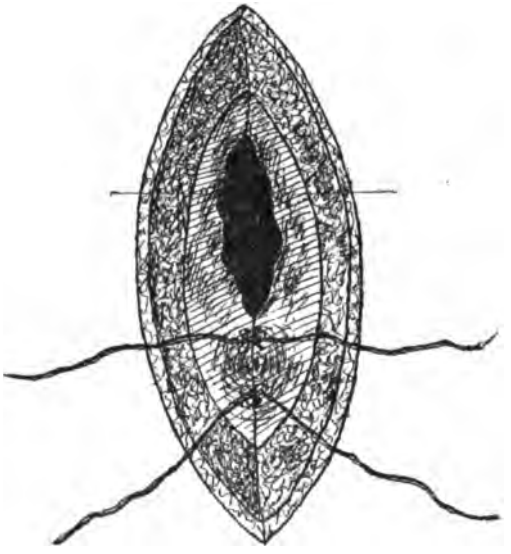

FIG. 6. Shows the Position of the Three Sutures which prevent the Stripping of the Peritonæum.

of great importance, as the weight of the uterus dragging upon the peritonæum after the attachment sutures have been tied will strip it off from the abdominal wall to a greater or less extent. (See Fig. 5.)

To prevent this the first three sutures closing the abdominal incision are introduced so as to include the peritonæum at the points of attachment (see Fig. 6.) When these sutures, along with the others closing the incision, are tied the peritonæum is held in close contact with the abdominal wall at the point of attachment.

5. *Tying the Attachment Sutures.*—The free ends of the attachment sutures are now released from the grasp of the forceps and traction

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made upon them. This brings the fundus of the uterus in direct contact with the peritonæum. The sutures are now tied and the free ends cut close to the knots (see Figs. 5 and 7).

6. *Closing the Abdominal Incision.*—The last step in the operation is to introduce the remaining sutures necessary to close the abdomi-

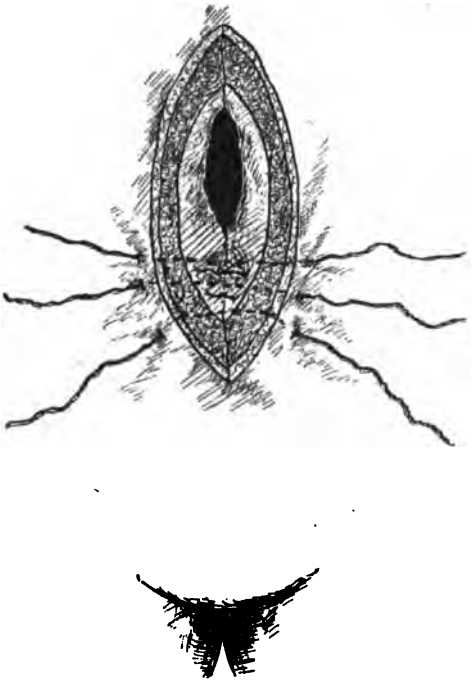

FIG. 7. The Attachment Sutures tied. They include only the Peritonæum and Uterine Tissue.

nal incision. As the incision is two and one-half inches long, and as I use three sutures to the inch four more are necessary for this purpose.

The sutures being in place, we begin by tying first those at the lower angle of the wound, as they control the peritonæum at the point of attachment. The dressings are now applied and the operation is completed.

As the result of the technique of this operation there is developed, in the course of a few weeks, a small band or ligament, about one to one and a half inches long, half an inch wide, and one-eighth of an inch thick, between the uterus and abdominal wall, which admits of

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great mobility, so that the organ is readily acted upon by intra-abdominal pressure. Again, the newly-formed ligament holds the uterus in a normal position without holding it closely attached to the abdominal wall. Furthermore, the second attachment suture, being posterior to the median line dividing the fundus antero-posteriorly, pulls the uterus somewhat anteflexed, which is its normal position.

The technique of this operation is the same as employed by Kell, Penrose and others, except that I do not introduce the sutures into the peritonæum as Kelly does or include, like Penrose, a few of the fibres of the muscle. Again, the three sutures which control the stripping of the peritonæum, which I have added to

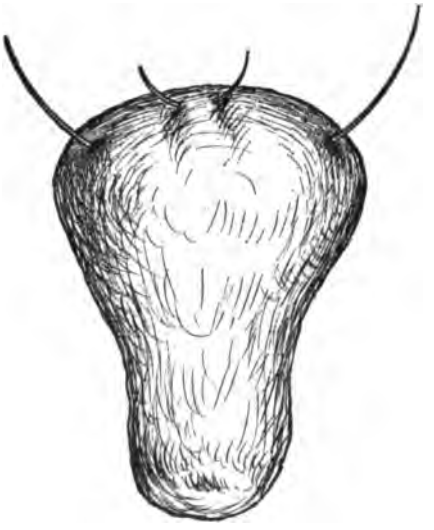

FIG. 8. Shows the Correct and Incorrect Method of introducing the Uterine Attachment Sutures, Posterior View.

the technique, are of great importance. If the peritonæum becomes separated from the abdominal wall a pocket results, which may become filled with blood and cause inflammation, resulting in a firm and immovable union between the fundus of the uterus and the abdomen.

If the technique of this operation is thoroughly carried out, it is almost impossible for any bad results to follow in subsequent pregnancies and labors. The uterus is pulled close to the abdominal wall in a fixed and immovable position, but it is held by a delicate ligament which allows great freedom in its movements, easy expan-

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sion in all directions during pregnancy and a normal presentation of the fœtus during labor.

The bad results which are reported following the operation of ventral attachment of the uterus are due to the fact that the majority of operators use an incorrect method and introduce the sutures with a large, heavy, curved needle, entering the uterus near the oviduct and coming out on the opposite side in the same position. (See Fig. 8.)

The aim of the incorrect technique is to secure a broad, firm attachment of the fundus to the abdominal wall. The sutures also include the peritonæum, muscles and aponeurotic fascia and are tied over the aponeurosis and remain buried. Naturally this results in a firm and lasting union, and consequently the evil results lately reported in papers and editorials are almost certain to follow.

From a large experience in the operation of ventral attachment I have no hesitation in saying that it is the most satisfactory treatment we have for the cure of chronic retro-displacements of the uterus. I believe, furthermore, when this operation is properly appreciated by the profession, that many cases of so-called nervous prostration and other conditions, causing chronic invalidism will be permanently cured and a large number of women restored to health.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, November 4, 1897.

The *President*, E. E. MONTGOMERY, M.D., in the Chair.

Extra-uterine Pregnancy with Involvement of the Appendix Vermiformis.

Dr. L. J. HAMMOND: Ida M., single, mulatto, aged twenty-two, was sent to the Samaritan Hospital by Dr. Howard Anders, on the evening of October 16, with the following history:

Had enjoyed excellent health with the exception of the diseases of childhood and three or four attacks during the past year (she not being sure whether it was three or four), of pain in the right iliac region, of short duration, until September 13 of the present year, when she was taken with severe colicky pains in the hypogastric and right inguinal region. The pain, which was constant, was severest in front, especially about the umbilicus, this intense pain lasting for three or four hours and slightly subsiding though never disappearing. Since September 13 the pain has been severe at times only, subsiding for several days, though the tenderness over the right inguinal region was very decided during the period between September 13 and her admission on October 16. Temperature ranged between 103° and 100° and the pulse between 120 and 90. On the

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afternoon of her admission, the pain rapidly increased in severity with vomiting, marked distension of the abdomen, restlessness, legs flexed upon the abdomen and all the symptoms that go with a well-defined attack of appendicitis. There was also marked fullness in the right cæcal region. The pains were the most intense that I have ever seen a patient suffer.

The case was prepared for operation on the afternoon of the 16th, by the resident, because of the history that had been furnished him by her attending physician, before I had seen her. When I arrived, about 1 o'clock, the case presented symptoms which showed the need for urgent interference. At this time the temperature was rapidly declining, it being subnormal, where but a short while before it had been 100°, the patient showing extreme pallor.

I made a hurried vaginal examination and found the cul-de-sac markedly distended with what I supposed, from the history just narrated, to be probably a ruptured pus sac. The uterus was pushed up against the abdominal wall. The pain was so intense that no further examination was made and the operation was done at once, the woman being already prepared before my arrival.

The abdominal cavity was opened by the usual median incision and what I supposed to be pus was from 1 to 1½ quarts of blood largely coagulated. After removing this and washing out the abdominal cavity with sterilized normal salt solution, the further examination of the pelvic contents revealed this large ruptured tube with the vermiform appendix firmly adherent to the fimbriated extremity of the fallopian tube and both bound down to the abdominal parietes. I here show you a specimen of ruptured tubal pregnancy and also the vermiform appendix, which it was necessary to separate from the former in order to bring it up sufficiently into the incision to enable me to properly ligate it.

The posterior portion of the body of the uterus as well as the peritonæal surface of the rectum, and extending over to the right inguinal region, were thoroughly covered with islands of placental tissue united to each other by fibrous bands—its own sinuses. After ligation of the uterine annexa and the appendix, it was with the greatest difficulty that I succeeded in removing this placental tissue, which was everywhere to be found in and around the pelvic floor. The bleeding was excessive and it was decided to pack with sterilized gauze the entire cul-de-sac. After again thoroughly irrigating the cavity with hot normal salt solution, the upper portion of the incision was closed. The left ovary being healthy was

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not removed. Three enemas of normal salt solution were given after the operation at intervals of three hours.

The patient has not shown any bad symptoms whatever, convalescence progressing unusually rapidly.

With the combined condition of appendicitis and extra-uterine pregnancy, I think it becomes a matter of importance to determine which preceded the other. With this object in view I have endeavored to fix the time of the first and last coitus. It is as follows:

Three or four times, the patient states, from August 18, 1896, until December of the same year; not again until April, 1897, and not after that until July 1 of this year. She states that the menstrual period has always been regular and that she has never been pregnant until this year, although menstruation has usually been accompanied by some pain. She states that since July it was not as it formerly had been, being not only more scant but more or less light colored and coming on frequently throughout the month; in other words, she had an almost constant muco-sanguinous discharge containing shreds which I have no doubt under the microscope would have been shown to be portions of the decidua.

There is, therefore, in this history if not positive evidence of extra-uterine pregnancy certainly symptoms that would make one strongly suspect, had this history been given before the rupture took place. With this fact settled it seems to me that the natural conclusion would be that the attack of pain which came on so suddenly, accompanied by obstinate constipation, vomiting, marked elevation of temperature and pulse, intense pain in the cæcal region running a course of hours and gradually subsiding under treatment by free purgation (though never subsiding sufficiently to permit the patient to assume the recumbent position without great suffering) justifies one in concluding that this final attack of appendicular inflammation was secondary to that of the tubal pregnancy.

On further questioning, however, the woman states that there have been frequent attacks of pain in the same region lasting a few hours; a dose of castor oil or some purge relieving it. There is no doubt, therefore, in my mind that a morbid change within the appendix, causing it to become adherent to the fimbriated extremity of the fallopian tube and thereby arresting the function of transmission of the ovum through the tube to the uterus was the cause of this extra-uterine fœtation.

Had it been possible to have made an examination of the uterus and its appendages when she suffered pain first in September, it

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would have been possible to have determined at least the presence of a pathological condition, although I am not sure that I, at least, would have been able even at that early period to have positively determined the presence of tubal pregnancy but would probably have considered it one of appendicitis or, if not that, acute inflammation of the tube and ovary, since the latter are also accompanied by pain and tenderness in the same fossa, nausea and fever. The tenderness is not so well marked in disease of the uterine appendages as it is when the inflammation involves the appendix, nor does the temperature go up so rapidly; but the nausea and vomiting may be greater in the former than in the latter. It may be said to be if not impossible extremely difficult to differentiate between inflammation of the right tube and the appendix, especially if the latter has dropped down, as it not infrequently does, when pathologic, into the region of the uterine appendages, where there is no decided enlargement of the latter, and, even when there is enlargement, especially if it be an abscess or a cyst, far out toward the fimbriated extremity of the tube, it may here be difficult to determine whether it is appendicular or tubal.

Discussion.

Dr. Charles P. Noble: I did not have the pleasure of hearing the paper but I would like to refer to a case on which I operated, having a number of local diseases; it was one of multiple fibroids, extra-uterine pregnancy, ovarian tumor and the appendix involved in the mass. I presume appendicitis came from the peritonæum and not infection of tube. That was the largest collection of diseases that I have operated upon. From the standpoint of diagnosis it was impossible to make an accurate one.

Dr. Geo. Erety Shoemaker: I have had a number of cases where the tube and appendix were both involved, but I have never yet failed to find, on bimanual examination, that where the tube and ovary were involved in a serious inflammatory disease the mass was very much more readily palpated from below than when the appendix alone was involved. In other words, the appendiceal mass has been, in my experience, higher up in its relation to broad ligament and uterus, even though the appendix has dropped into the true pelvis. I think there are cases in which it is impossible to say which was the primary lesion. I depend a good deal in giving an opinion that an ovary and tube are involved, upon finding the mass very low down and close to the side of the uterus. I operated this

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week where I supposed the appendix was involved as well as the appendages. I felt sure of the tubal and ovarian disease, but because the woman had had for many months severe catarrhal enteritis appendicitis also was suggested. I found that the appendix was comparatively normal, the tube and ovary totally destroyed, probably by tubercular inflammation. This was a profoundly septic case, but it is recovering slowly under good drainage.

Dr. C. P. NOBLE: In some cases I think it is impossible to make a differential diagnosis and I think this is particularly true in puerperal cases. Since Dr. Shoemaker has discussed the point I recall very well several cases I have operated on, post-puerperal cases, which were supposed to be appendicitis and which proved to be pus tubes. The first case was a woman of historical interest, because she was the first woman upon whom a conservative Cæsarean section was done in this country and the first woman to have two consecutive symphysiotomies. She was delivered once by inducing premature labor very early, but labor was so difficult that symphysiotomy was elected afterward. In this case, after the second symphysiotomy, she developed right-sided inflammation high up in the appendix region and the question came up whether this was appendicitis or tubal disease. There was no apparent reason why she should have pus tubes, as she had no apparent infection after labor and both she and her husband stated that there had been no sexual intercourse after labor until the time she was taken ill. It was even rather high for an appendix abscess. The broad ligaments on both sides were quite flaccid and felt entirely normal on examining from the vagina. When the abdomen was opened a pyosalpinx was found. The explanation was that, the woman having had Cæsarean section, the uterus was fastened high up and displaced the tube in the abdomen. I recall a case reported as appendicitis complicating labor: I operated for Dr. Cross, of Jenkintown. The patient was seen eighteen days after labor and had an abscess high up in the appendix region and there again the broad ligament was quite normal on the right side. The patient was very sick at the time, the temperature having risen to 103° F. or 104° F. for two weeks. I was quite content with simply incising and draining, and I supposed at the time that it was an appendix abscess. At that operation I wounded the bowel and subsequently had to operate to close the fistula. When this operation was done I discovered that it was not an appendix abscess but a pus tube I had operated upon.

I remember another case in which the abscess was very high up

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and symptoms were all referred to the renal region. There again the woman was almost moribund when operated upon and drainage only was attempted. I had occasion within two years to operate for a hernia which appeared at the site of the incision for drainage and found the appendix uninvolved. There were slight adhesions in the appendix but she had intra-peritonæal abscess of pelvic origin and not of appendicular origin. In her case I found a small ovarian tumor at the second operation which was also removed. These three cases of post-puerperal abscess I recall very well, so that I think, at least in post-puerperal cases, we may have very great difficulty in making a diagnosis. I have tested the sign Dr. Shoemaker relies upon and it has failed in each case.

Dr. J. M. FISHER: I recall a case which came under my observation a year or more ago in the Philadelphia Hospital, in which a diagnosis had been made of appendicitis some time previously and operation had been done. Subsequently she was referred to the gynæcological ward, claiming that she still suffered from the same pain she had previous to the operation. Upon examination, I found a right-sided pelvic enlargement and upon opening the abdomen found a pus tube. Whether the pus tube had been overlooked at the previous operation I am not prepared to say.

A few weeks ago I was invited to see an operation for appendicitis by a gentleman who has had some experience in general surgical work. He told me that the patient had the typical pain at McBurney's point and that an examination disclosed nothing in so far as the pelvic organs were concerned. On opening the abdomen he raised the appendix and it appeared to be perfectly normal, but at the site of the incision pus ran out, and, upon passing the fingers down into the pelvis, he found he had to deal with a ruptured pus tube. He closed the lateral opening, and, making a central incision, removed the cause of the pus which had been issuing through the first opening. He declared there was no localized pelvic tenderness, that the patient simply had pain at McBurney's point. There is another interesting point in connection with the doctor's case, that is the fact that the adhesions between the appendix and the right uterine appendage were firm, showing that the woman no doubt had had an appendicitis a long time previously and the tube of that side being thus fixed it might explain the cause of the ectopic gestation. That the vermicular motion of the tube is necessary to transmit the ovule to the uterus is, I think, an interesting question in connection with this case.

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Dr. SHOEMAKER: It has been my custom in those cases where there is some difficulty in determining whether both appendix and tube are involved to open in the median line. I made this a point in a paper last year before the Academy of Surgery. I feel that the tube can be more safely dealt with by median incision, that the appendix can be almost as well dealt with as from the side and that it is safer under these circumstances to open in the median line, especially in chronic cases. Where you have a distinct appendicial abscess or where you are operating for appendicitis alone of course the lateral incision is better. I have done this in a number of cases and have every reason to feel that it is good surgery if careful study of the case is made before beginning the operation. No case has died where both appendix and tubes have been removed in this way nor have any complications been met with which have led me to regret the median incision.

Dr. JOHN B. DEAVER: My experience with appendicitis covers many cases. I have always taken the ground that it is not anatomical to operate for appendicitis in the middle line. There are a class of cases which can be dealt with in this way, I grant. Those of us who have dissected a number of bodies know that the appendix lies far from the middle line. How the appendix can be dealt with, safely to the patient through the middle line, when it lies post-cæcal or post-colic and adherent, I cannot understand. It may be a want of manual dexterity on my part that prevents my doing it but I am free to confess on general principles it is rather an unfortunate way to reach it. I have seen a number of cases such as Dr. Shoemaker has referred to. I have cut down on cases of the appendix in extra-uterine pregnancy, such as Dr. Hammond relates. Where the diagnosis is not clear, and we all know that these cases are attended by a great deal of obscurity at times, I think it is safer if we believe that the maximum amount of trouble is in the appendix to first explore that region. An incision of an inch is sufficiently large to admit the index finger, and this will clear up the diagnosis. Of course our experience differs; Dr. Shoemaker's experience differs from my own and he has had no trouble in dealing with his cases. I confess I should fear to attack the appendix from the median line and I think my experience coincides with that of most surgeons who do much of this work.

Dr. L. J. HAMMOND: I always make the lateral incision for appendicitis where the disease seems confined to the right inguinal region. My reason for electing the median incision in this instance

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was because I was sure there was a large quantity of fluid of some kind to deal with, and, when this condition obtains, I believe the median to be preferable, owing to the more thorough and rapid means of thoroughly cleansing the entire abdominal cavity. As to the differentiation between tubal and appendicular troubles, there is to my mind no doubt that errors must of necessity occur, especially in the female. In support of this statement I would like to say that an eminent gentleman of this city, visiting New York for the purpose of witnessing some operations in appendicitis cases, was taken to the clinic of one of the most prominent surgeons of New York. The first case of supposed appendicitis operated upon proved to be one of ovarian abscess, while the next case in the hands of another gentleman, supposed to be ovarian, proved to be appendicular. It would therefore seem to me that the means of differentiating appendicular and annexal disease must admit of some degree of uncertainty. A few weeks ago I opened the abdominal cavity in the lateral region for what (after I had made a careful examination) I supposed to be appendicitis and found a pedunculated fibroid tumor having its point of attachment high up posterior to the fundus uteri and adherent to the parietal peritonæum, but with a perfectly normal appendix save a slight amount of adhesion sufficient only to attach the growth.

Displacements of the Uterus from the Standpoint of Treatment; with Special Reference to the Management of Dislocations Forward and Backward.

By W. Easterly Ashton, M.D.

(See page 15.)

Discussion.

Dr. George I. McKelway: I was rather surprised that Dr. Ashton persists for one year with the so-called "conservative" treatment with the hope that a year's treatment would restore the ligaments, the guys of the uterus. I believe if a result is not accomplished in much less time than that it would not be accomplished by a year's treatment. I am also surprised that he has not spoken of the Alexander operation. My own experience with it in cases where there are no adhesions has been favorable. It certainly does

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avoid some of the risks of abdominal section and gives an excellent result. I notice in speaking of using sutures in the uterus that he passes them only through the peritonæum and goes on to speak of the fear or fact that if the peritonæum is not secured to the abdominal wall by other sutures, through-and-through sutures, that these fixation sutures may strip the peritonæum from its attachment to the abdominal wall. I think the preferable method is to include in the fixation sutures some few fibres of the muscle. This will obviate the possibility of such an accident as he anticipates and will permit the closing of the abdominal wall in a better way than by through-and-through sutures; that is by closing the peritonæum by fine silk or catgut, the fascia by the silver wire mattress suture, and the skin by an intra-cutaneous suture of fine silk or catgut. I know some gentlemen claim to have had unfortunate experiences with buried silver wire sutures, but I have used them to close the fascia in every case of abdominal section I have done in the last two years, with uniformly good results.

Dr. CHARLES P. NOBLE: With most of Dr. Ashton's paper I think we are most of us in accord, and, as he himself suggests, the point which might elicit discussion is the question of the proper operation for retrodisplacements of the uterus. I agree in part with what the Doctor has said about the bad results which have followed ventrofixation, and I was sorry to find that Dr. Ashton continued the use of the word. I think the use of the word ventrofixation is very pernicious, as it teaches a doctrine which he himself repudiates, namely, that the uterus should be *fixed* to the abdominal wall. If we fix the uterus to the abdominal wall, as the paper has very clearly pointed out, very considerable risks are run that difficulties in labor will follow. The technique which has been described is very similar to that of Dr. Kelly with the merit of leaving the uterus suspended in the pelvic cavity and yet freely movable. There is no doubt this method has given the best results and less complications from the standpoint of labor. But even this method is not a positive preventive of trouble in labor, because no man can tell whether slight infection will follow an abdominal operation in the extensive adhesions. In one of Kelly's cases in this city that trouble did follow, causing difficult labor, although it did not cost the woman her life. The cause of the difficulty in labor was suppuration in the wound after the hysterorrhaphy. In any of the cases operated on by Dr. Ashton infection might take place and a broad surface of adhesions form instead of a slight one.

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I have myself for several years used the Alexander operation for movable retrodisplacements and my experience with it has been most happy. There is no insuperable difficulty in defining the ligaments. In general they are easily found, the operation is simple and the patients have not only made good primary recoveries but the subsequent results are good. I have done about a hundred suspensions and fixations of the uterus and had perhaps fifty round ligament operations. The results in my hands have been distinctly better in round ligament operations than by suspension. The risk, while very small in either case, is distinctly less in the round ligament operation. Personally, I have practically given up the suspension operation in women who are liable to bear children. The exception is in procidentia, where I think the patient had better take the chance of labor than to go through the world with uncured procidentia. There are some cases of procidentia which cannot be cured without pretty firm fixation of the uterus in addition to the proper plastic vaginal work.

Like Dr. McKelway I would also suggest that the technique of the operation could be improved by the substitution of tier sutures for the through-and-through sutures, as I am quite certain that about 5 per cent. of hernias will follow this method of closing the abdominal wound. I would not, however, endorse Dr. McKelway's suggestion that some of the abdominal muscle be included; I have tried all the different methods of sustaining the uterus and I think the technique of Kelly certainly possesses the best features. If I should change it it would be to that of Olshausen in which he attaches the insertions of the round ligaments to the abdominal wall.

Dr. W. Easterly Ashton: I waited one year before resorting to operative measures in recent retrodisplacements because my experience leads me to believe that it is a conservative method. A woman with a recent displacement does better to wait one year, because she can often be cured without operation. I did not refer to the Alexander operation in my paper because I do not believe in it. That is my personal opinion. I only use the peritonæum for the attachment of the fixation suture because I believe if we attach the sutures to the muscle, we are bound to have more or less pulling apart of the fibres. In reference to the closing of the abdominal wall, I am aware that Dr. McKelway and Dr. Noble employ the terrace suture. I do not use it myself. I believe I get the best results from the through-and-through suture. I have had my experience with the terrace suture and I was forced to give it up, along with a

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number of other men. Dr. Noble's results, he tells us, are good with the suture which is no doubt the reason he employs it; personally, I get the best results with the through-and-through suture.

Two Cases of Abdominal Section for Tumors having Twisted Pedicles.

Dr. CHARLES P. NOBLE: The following cases illustrate the consequences of torsion of the pedicle in intra-abdominal tumors:

The first case, Mrs. W., consulted me in May, 1897. She had a procidentia and a small mass to the left of the uterus. I was in some doubt as to whether it was a small tumor or an enlarged ovary. Circumstances prevented operation at that time, and she consulted me again September 10, when there was no doubt that she had a small tumor, which was freely movable. Operation for the removal of the tumor and the procidentia was advised. October 4 she was taken with severe pain, accompanied by slight fever. The pain was so violent as to require the use of large doses of morphia and her general condition gradually became worse. There was a history also of several attacks of slight pain at intervals during the summer. I saw her October 8, late in the day. The pulse had ranged below 100 until my visit, when it was 120, and her temperature had been at or about 100°. I suspected torsion of the pedicle and advised immediate operation. October 9 the tumor was removed and proved to be a parovarian cyst with a twisted pedicle. The tumor and pedicle were dark and congested but not necrotic. There was considerable free fluid in the pelvis but no inflammatory lymph. Believing there was no septic peritonitis, I washed out the pelvis with salt solution and closed the abdominal wound without drainage. At the time of operation the temperature was 102° and the pulse 160. The patient steadily improved and made a good recovery.

This case is an illustration of one of the evils of delay in removal of intra-abdominal tumors. A more innocent tumor than a simple parovarian cyst cannot be conceived, and yet, through the existence of torsion of its pedicle, it would undoubtedly have caused the death of the patient had it not been promptly removed.

The second case, Miss R., consulted me September 14, 1897. She gave a history of general good health and of local trouble dating back for three years. Menstruation had always been regular and scanty, with a duration of two days—recently one day—with but little pain until the past year, when she had much pain before

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menstruating. For the past three years there has been a blood-stained discharge between her periods. She complained of what she called "her attacks," which she had had for three years, occurring about every six months and lasting from one to three days with severe pelvic pain without fever. The last attack was more severe and accompanied by slight fever and tympany. Examination showed a hard tumor in the pelvis apparently connected with a tumor which filled up the left half of the abdomen below the umbilicus. The abdominal tumor was slightly fluctuating. Owing to the fixity of the abdominal tumor, a probable diagnosis of inflamed dermoid or malignant ovarian tumor was made. She was operated upon October 21. The abdominal tumor proved to be an ovarian cyst with twisted pedicle universally adherent; and the pelvic tumor, multiple fibroids. A hysterectomy was performed and the patient has made an uncomplicated recovery.

The two cases well illustrate the difference in the result of an acute strangulation of the tumor by a twist in its pedicle as contrasted with the gradual cutting off of the circulation, inflammation in the tumor, and the formation of a new blood supply to the tumor, and the formation of a new blood supply to the tumor through the adhesions. The symptoms were so moderate in the second case, that the probability of torsion of the pedicle did not occur to me before the operation.

Abdominal Section for Pyosalpinx and Intra-Abdominal Abscess.

Dr. Charles P. Noble: The following case is reported as an illustration of the favorable influence of the transfusion or subcutaneous injection of salt solution in conditions of shock or profound prostration and also because of its bearing upon the question of drainage of the peritonæal cavity after abdominal section.

Mrs. B. consulted me March 9, 1897. Her age was thirty-one. She was a large and fat woman, weighing two hundred and ten pounds. Her personal and menstrual history was negative until some five years ago, when a suspicious vaginal discharge was present. For the past five years menstruation has lasted ten days instead of its normal period, and during this time there has been an abundant yellow leucorrhœa. She has had one supposed miscarriage at the sixth week. For two years past she has had attacks of pelvic peritonitis. Two years ago she was in bed seven weeks and an abscess discharged through the rectum following a pelvic

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examination. This ceased to discharge after two weeks and subsequently closed up. She has had numerous inflammatory attacks of a few days' duration and was in bed during February, 1897.

A pelvic examination demonstrated a vaginitis and the vagina and uterus of a nullipara. The pelvis was choked with a hard tumor of irregular outline, situated more especially to the left and front of the uterus. A diagnosis of probable fibroid and pus tube, with extensive pelvic exudate, was made. Operation was advised, but the patient was told it would be one of more than average severity and gravity. The patient was admitted to the Kensington Hospital for Women on March 29 and operated upon April 5, operation having been delayed on account of bronchitis. The operation proved to be one of the most difficult and the most tedious I have ever done, occupying almost three hours. The difficulties of the operation were due to the thick abdominal walls of the patient and the very extensive and dense adhesions and exudate in the pelvis. The duration of the operation was greatly prolonged because of the numerous bowel adhesions and because almost all adherent surfaces, when separated, obstinately oozed. The tumor in front of the uterus proved to be an abscess on top of the bladder, walled in by masses of exudate and the omentum and not a fibroid tumor. Owing to the length of time taken in separating the bowel adhesions, the appendages only were removed instead of a hysterectomy being done. Before the completion of the operation, as was to be expected, the patient became profoundly shocked. This was largely due to the duration of the operation and to the traumatism inflicted within the abdominal cavity but partly to loss of blood. The pulse was at least 150, and could scarcely be counted at the wrist. The operation was completed by washing out the pelvis with salt solution, leaving thirty-two ounces in the abdominal cavity; no drainage. An additional pint of salt solution was put under the breasts and another pint with two ounces of whisky was injected into the rectum. It is unnecessary to say that full doses of digitalis, strychnine and caffeine were used hypodermically and whisky was freely given by the bowel until the patient's condition finally improved. These agents, however, had little apparent influence in improving the pulse, which was always improved by the use of salt solution, which was used in the following amounts: daily twenty-four ounces of salt solution and eight ounces of whisky were given by rectal enemata; at times some of this was rejected. On the day following the operation, at 3 P. M. the pulse was 160, the patient restless and extremely weak. Thirty-

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two ounces of salt solution was introduced into a vein, which brought the pulse down to 150 and greatly increased its strength. At 9 P. M. forty ounces were introduced under the breasts. The following day forty ounces were given subcutaneously in the thigh in the morning and in the evening forty-eight ounces in the opposite thigh. The following day thirty-six ounces were introduced in the scapular region. The patient then substantially improved, and the use of salt solution was discontinued. Thus on four different days, and really within seventy-two hours, about three hundred and forty ounces of salt solution were introduced, and, aside from that lost from the bowel, must have entered the circulation of the patient. I have no doubt the patient owes her life to the action of the salt solution in assisting the circulation.

Her improvement continued from the 7th of April until the 18th, although at no time had her condition been entirely satisfactory. At this time the temperature began to ascend and she had violent pain in the abdomen and a chill. The septic condition continued until the 27th, when a discharge of pus and fæcal matter took place through the abdominal wound. The probable explanation is that a point of bowel which was detached during the operation gave way about the 18th, resulting in an intra-peritonæal abscess. The discharge must have come from high up in the small intestine, as the character of the discharge was distinctly biliary and there was very little fæcal matter present. The abdominal wound broke down at two points, which communicated within the abdominal cavity. When the patient was discharged from the hospital on the 3d of June, about two months after the operation, the fistule had contracted down to the size of a "pin's head" and shortly afterward closed.

In September last the patient expressed herself as feeling entirely well and is now doing her housework. On examination, slight infiltration of the left broad ligament was found but otherwise the parts were in good condition and free from pain.

A curious point in connection with the case was from the standpoint of buried silkworm-gut sutures. The abdominal wound was closed with buried silkworm-gut sutures, and, when the wound broke down, I presumed these would be discharged, as has been my experience heretofore. Curiously the wound healed without discharging these sutures and none have since become infected.

I feel the case is worthy of report: First, as showing the influence of large amounts of salt solution under desperate circumstances and

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also the quantity which can be added to the circulation without injuriously diluting the blood; secondly, as illustrating recovery without drainage in a case which would be selected as a typical example for the use of drainage. Not only was the pelvic abscess opened during the operation but the walls of the abscess, being the bladder, could not be removed. The subsequent occurrence of fæcal fistule could not have been influenced by drainage of the pelvis, as undoubtedly it did not occur until about twelve or thirteen days after the operation.

DISCUSSION.

Dr. L. J. HAMMOND: Has Dr. Noble had any experience with normal salt solution in affecting a person by over-dilution of the blood? My idea was that it really mattered very little whether the salt solution was in excess of the blood; it was rather quantity than specific action that did the good. That is to say, it gives the heart something to act upon, thereby avoiding collapse.

Dr. CHARLES P. NOBLE: I don't know of any experiments which have been made as to the amount of salt solution which can be introduced without injuriously affecting a human being. One would suppose there would be a limit to dilution, but so far as my own experience goes I have never used so much salt solution as in this case. I have never had any reason to believe it did any harm. The only untoward result of which I am cognizant was in a patient with chronic phthisis, with broncho-pneumonia lighting up. I gave salt solution to stimulate her and she had a very severe rigor after the salt solution was introduced into the vein. Whether in that case the rigor was due to transfusion it is difficult to say. Otherwise I have only noted good effects. I quite agree that the value of the solution is in giving the heart something to pump against.

Rupture of the Puerperal Uterus and Injury of the Intestine with the Curette.

Dr. CHARLES P. NOBLE presented also a specimen consisting of three feet of the small intestine. He said:

I have here three feet of the small intestine which I removed recently under these circumstances: A very competent physician was curetting the pregnant uterus for an incomplete abortion when he found he had the small bowel in the vagina. He sent for me to repair the injury. Similar accidents to this have been reported. I

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remember some time ago Dr. Mann, of Buffalo, reported several cases in which, in curetting the uterus, the small bowel had been pulled down. In one case quite a number of feet were pulled down and the attending physician very unwisely cut off what he had pulled down before he sent for Dr. Mann. In that case there was a question of rupture of the uterus and a question of fæcal extravasation. In this case the doctor had already emptied the uterus, he carefully washed the bowel and pushed it up into the uterus. I opened the abdomen and found a small rent in the fundus half an inch long. The bowel had replaced itself in the abdominal cavity. It was not lying inside the uterus. After sewing up the hole in the uterus and sponging out perhaps half a pint of blood these three feet of small intestine were found entirely detached from the mesentery. I made a resection with Murphy's button. The last report at the end of two weeks was that she was doing very well. The only thing I have to say about this case is that it shows the wisdom, in my judgment, of using the fingers to empty the pregnant uterus. In my own work in attending abortion cases, if occasion to remove placenta occurred I have always done so with my finger or fingers and I am quite satisfied that the fingers are all sufficient to remove the placenta in these cases. Not only are they all sufficient but they constitute the only safe instrument. It is sometimes objected that the fingers are not long enought to reach the fundus, but the fundus can be pressed down upon the fingers when the half hand is in the vagina. Of course anæsthesia is necessary. If septic conditions are present I have curetted the uterus with a broad curette after removing the placenta; but aside from this occasional use of the curette I think it should not be employed in the treatment of abortion.

FRANK W. TALLEY, *Secretary.*

Official Transactions.

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VAGINAL *VERSUS* ABDOMINAL OPERATIONS, PRINCIPALLY FOR PUS IN THE PELVIS.*

By Joseph Taber Johnson, Washington, D. C.

In bringing to Philadelphia a bundle of old straw, in the shape of a paper upon pus in the pelvis, and threshing it over again in your Society, where this subject has been so frequently and so ably discussed, it has been suggested by a kind friend that I am placing my head in the lion's mouth, and that it is quite liable to be bitten completely off.

Should any sound grains of wheat be evolved from the threshing of the essay or the essayist in the discussion which may follow, the hope is expressed that the seed may not fall entirely upon stony ground, but that it may bring forth a little fruit for the benefit of the cause for which we are all honestly and faithfully laboring. In the memorable discussion of vaginal versus abdominal operations which occurred in the American Gynæcological Society at its last meeting in Baltimore in 1895 the subject was introduced by the reading of three papers, the first by Jacobs, of Brussels, the second by Wathen, of Louisville, and the third by Henrotin, of Chicago.

The first two papers advocated vaginal hysterectomy, largely on account of pus, while the third advised a variety of operations through the vagina for a variety of purposes, not the least important of which was that for exploration and the prevention of abscess by breaking up lymph exudates early and establishing free drainage. An important debate was elicited which was opened by your distinguished President upon one side, and by a no less distinguished member of your society upon the other. Drs. Lusk, Polk, and others, pronounced the discussion one of the most important which had ever occurred in the society. It was generally believed, however, that the question was by no means settled, and that further time and experience, only, could determine the relative value of the two methods: whether the one should be practiced to the exclusion of the other, or whether a wise and

* Read by invitation. For *Discussion*, see page 60.

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true conservatism dictated that the general condition of the patient, as well as the situation of the local lesion, should decide the operator in each individual case which method to adopt for the best good of the innocent and trusting sufferer. Lusk especially congratulated the Society that we now had two routes through which we could reach these pus collections. Many statistics, with which you are all familiar, were quoted on both sides, and some of those who had operated very little, or not at all, through the vagina, promised to try that method in cases thought to be suitable, and to be governed by their own, and the results of others in the future. It is with the hope of still further elucidating this interesting and important subject that my paper has been written, and also for the purpose of gathering from the discussion which may follow, what views are now entertained in this great center of medical education in regard to vaginal methods of operating principally for the relief of patients suffering with pus in the pelvis. There seems to be little if any division in the profession as to the advisability of performing hysterectomy through the vagina when indicated for malignant diseases. The present discussion then is centered chiefly upon operations for pus and old blood collections in the pelvis, situated, for the most part, low down, behind the uterus, and particularly in women who wish to have children. In the evolution of the vaginal operation, it has gradually developed from a simple tapping with an ordinary trocar, through various stages, until now the posterior cul-de-sac is widely opened, the bottom of the pus sacs are torn out as completely as possible with the fingers, free irrigation is practiced, and gauze packing is lightly introduced, thus keeping open the best avenue of drainage. It is quite possible that some of the present criticisms of this modern vaginal operation are aimed at the old and incomplete, but now fortunately obsolete methods which have been practiced, in some form, from time immemorial. Certainly the present results obtained in bad pus cases are far more gratifying in their lessened mortality and post-operative sequelæ than when these cases were all operated on through the abdomen. In a paper read before the Southern Surgical and Gynæcological Society in November, 1896, at its Nashville meeting, Dr. Haggard, who had been an interne in the Women's Hospital in New York, stated that he had recently collected the mortality statistics of abdominal operations for pelvic pus, in five metropolitan and Baltimore hospitals for the preceding year, and that the death rate had been found to be 18 per cent. Dr. Hanks, of New York, in a recent paper on this subject, in recounting his conversion to the ranks of the vaginal operators,

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says the mortality of abdominal operations in badly adherent pus cases lies between 25 per cent. and 30 per cent. Dr. Noble, of this Society, in a paper read at the Atlanta meeting of the American Medical Association in August, 1896, placed the death rate in the same class of cases at about 25 per cent. Several other recent papers on pus in the pelvis make practically the same statement. One paper by an abdominal surgeon of my own city "on 66 laparatomies for pus" states his mortality at 16 per cent., several of his fatal cases dying of shock within a few hours of the operation. Another sends a reprint, within a month, of 150 laparotomies for pus with a 25-per-cent. mortality in his first series of cases, which included a number of large pelvic abscesses in feeble patients. Now, Mr. President, I feel authorized, from my own experience, within the past three years, and from the experience of quite a number of excellent gynæcological surgeons, with whom I am well acquainted, to express the belief that if these fatal abdominal cases had been operated on through the vagina there would have been very little mortality to record or none at all. I recently reported a series of cases with considerable detail to our obstetrical and gynæcological society in Washington in which there were some cases as bad as they could be and still be alive, who were operated on by vaginal incision, irrigation and gauze drainage and they all got well, without an exception, and what is hardly less important they are permanently cured, with none of the drawbacks so frequently and dismally portrayed as likely to occur. The vaginal operation is performed much more quickly than the abdominal, and is therefore of greater advantage to exhausted patients. It is incomparably safer, as many operators report that it has hardly any death rate at all.

Why not adopt it then in a greater proportion of cases? The vaginal operation referred to in this paper, and practiced by the writer, and by those surgeons to whom he has referred, consists simply in the incision of the vaginal fornix immediately behind the cervix, the opening of the pus or blood sacs with the pointed curved scissors or the exploring finger, dilating as widely as possible these openings, the use of free irrigation and gauze drainage. Comparatively little preparation is required of feeble patients, exhausted by the pain, fever, sweats and nausea of a long or acute illness, and the operation is followed by little if any shock or elevation of temperature. The only instruments required are a Sims speculum, curved pointed scissors, a pair of dressing forceps and a tenaculum. This method has been practiced, and lives saved in some of the worst cases, without even the use of ether. In two of my cases we feared the anæsthetic more than we did the

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operation. It has been claimed by the opponents of the vaginal incision that it is unsurgical, incomplete and scarcely worthy of the name of surgical operation, and is likely to require the opening of the abdomen later on to correct the errors, and finish the work left undone by the vaginal operator. That these criticisms are unwise, unjust and incorrect, the numerous permanent cures resulting from the sub-pubic operation clearly and abundantly demonstrate. It might be useful to place the two operations and their results in direct contrast in a few brief propositions, as follows: The modern vaginal operation is quick, easy and safe for any surgeon. The abdominal operation is long and difficult, when many adhesions exist, and has a 15 per cent. to 25 per cent. mortality in the hands of all but the great experts, and their mortality must always be large in the bad cases. The vaginal operation permanently cures the patient in a much larger proportion of cases than was formerly supposed. The abdominal operation fails to permanently cure the patient in a much larger proportion of cases than was formerly supposed or leaves some of them in a condition nearly as bad as before the operation. It is very rare for the vaginal operation to be followed by any of the post-operative sequelæ. It is very common for the abdominal operation to be followed by many of the post-operative sequelæ. When the vaginal incision fails to cure and painful adhesions and troublesome pus sacs have to be subsequently broken up and removed through the abdomen the operation is robbed of many of its dangers, on account of the freedom from pus and the greatly improved condition of the patient. It is the universal testimony of too many good men to be doubted that the vaginal operation is scarcely ever followed by any shock or increased temperature; while the shock of the complete enucleation of old pus tubes from a dense mass of adhesions to the omentum, bowels, folds of the broad ligament, uterus, and, indeed, everything they touch, including the vermiform appendix, is often very great, and not unfrequently fatal within a few hours. Goelet says the patient will more readily consent to a vaginal section, hence hopelessly diseased organs may be removed earlier, and the mortality is thereby lessened and her sufferings relieved earlier.

Physicians will advise vaginal section in conditions which do not seem to present sufficient gravity to warrant the risk of abdominal section more frequently when they realize the simplicity and safety of the operation. It is doubtful if any one will deny that drainage of infectious pus or any other fluid is more thorough, safe and in accordance with the laws of gravity when down hill through the vagina than up hill through the abdomen. Then again, Coe, Hanks and others have

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recently drawn attention to the fact that women are becoming more intelligent upon these subjects and are themselves demanding to know of their surgeons if some of these operations which have formerly been performed through the abdomen cannot be just as safely done through the vagina. They have become acquainted with the troubles which too often follow in the wake of laparotomies from the sufferings and annoyances of their friends and acquaintances. They dread the longer convalescence, the stitches, the plasters, the possible mural abscesses, the frequently unsightly scar, the abdominal supporter for six or twelve months and the possible ventral hernia from which the sufferings are scarcely less than from the disease for which the operation was originally performed. Those who vehemently oppose this operation declare that the opening and draining of these pus collections through the vagina will not effect a permanent cure. It is suggested that this declaration is based on the opinion long held in regard to the inefficient and often dangerous method of tapping these absecsses with a common trocar or aspirator. By this method it is quite possible that blood vessels were punctured, the bladder, uterus and intestines injured, the pus not wholly evacuated and fresh infection produced by infiltrating pus, causing in some cases death and in others laying the foundation for a difficult and dangerous cœliotomy in the future. Attention is drawn to the fact, however, that the technique of the vaginal operation has greatly improved, and, as previously mentioned, a wide opening is now made, the parts fully explored with the finger, clots and masses turned out, the widely-opened pus cavity thoroughly irrigated with a hot normal salt or antiseptic solution and the parts loosely packed with yards of gauze, if necessary. In cases appearing to demand it, pus tubes, tubo-ovarian abscesses and the uterus itself are often completely removed, as you all know, through the vagina, leaving wide open the largest and best possible avenue for drainage. It is expressly desired, however, to emphasize the statement that these more radical steps are frequently unnecessary to a symptomatic, and in many more cases than one with an abdominal training would think possible, to a perfect and permanent cure. When I first began to operate for pus through the vagina, I told the families, and sometimes the patient, that the present operation was simply tentative and that later on, when she was stronger, the more complete surgical procedure could be done from above, thus producing a final and permanent cure. I now remember only one instance where, among my own cases, a secondary abdominal operation has been necessary. To my great surprise, after thorough drainage, the pus sacs were found to contract down, what was left to

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granulate up, and finally, as the general health was restored they must have been absorbed, as the uterus was left so free and healthy that normal periods have occurred and childbirth has not infrequently been reported. So I have come to believe that many of these cases which we formerly subjected to laparotomy, with all that that implies, may now be completely, safely and quickly cured by removing absolutely nothing but the offending pus. On the other hand, I have quite a number of times been compelled to remove the uterus from below, and thus secure good drainage, when a previous abdominal operator had left the pelvis full of adhesions, infected ligatures, sinuses or fistulæ. I doubt if there are as many supra-pubic operations required to correct the errors or supply the deficiencies of infra-pubic work as there are vaginal hysterectomies done to relieve the post-operative sequelæ of abdominal operations for pelvic pus. Lest it should be thought by some that the effects of abdominal operations for adherent, low-down pus tubes have been too greatly emphasized or exaggerated, I beg to refer members to a paper by Dr. A. Palmer Dudley on some of the injuries following laparotomy, in which he dilates especially upon seventy-eight cases of fecal fistulæ, collected by him, and the horrible condition in which these patients were placed by the constant foul odors and fecal discharges from which they suffered, caused by this too frequent accident. Also to two papers, read at the Hot Springs meeting of the Virginia Medical Society, last September, upon post-operative intestinal obstruction and post-operative intestinal paresis, by Drs. Taylor and McGuire, of Richmond; also to a paper in the October number of the *American Journal of Obstetrics*, written by one of the most skillful abdominal surgeons in America, whose experience outnumbers mine four to one, in which he portrays and denounces the frequency and extent of the post-operative sequelæ in language so vigorous and emphatic that the statements in this paper are exceedingly mild in comparison. Though intended for another purpose, the hope is expressed that he will pardon your essayist for introducing his evidence as favorable to the side of the question under discussion. If many of these accidents and drawbacks, as they are called, can be avoided by doing some of these operations, where the casus belli is favorably situated, through the vagina, I hold that it is our conscientious duty to practice modern vaginal surgery in the future more than we have done in the past. The evil prognostications of infection of the peritonæum from the vagina do not seem to be realized by those who are doing this work. If they occur, they must go to other surgeons and thus escape the observation of the original operators. Re-

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cent bacteriological investigations have proved that infection from the vagina need not be feared as much as was formerly supposed. Indeed, the vaginal operation for pus rarely ever opens the peritonæal cavity. The abdominal contents are so walled off by adhesions that they are neither touched or soiled, and while this very fact makes the vaginal operation safe and easy, it is exactly this fact which makes the abdominal operation difficult and dangerous.

To state it in another way, one operation is rendered safe and easy very much in proportion as the other is difficult and dangerous. The statistics of foreign and American operations have not been quoted, and the extent of their work in hysterectomy and other vaginal operations enlarged upon for the same reason that it is unnecessary to carry coals to New Castle. The audience is just as familiar with all these facts and figures as the essayist, and the subject is only mentioned to indicate that it has not been overlooked. It would be interesting to dwell upon the other operations through the vagina which are now being frequently done with great benefit and with few drawbacks, which have been formerly done through the abdomen, but the twenty minutes which your President wrote me would be allowed to this paper must be nearly if not quite exhausted; I will therefore be compelled to simply enumerate them, leaving out the comments which their importance, in this connection, deserves. This enumeration is made from reports of cases, reprints of papers, and private letters from men whose names are familiar to us all and with many of whom we have all been long and familiarly acquainted, which places their authority beyond question. They are such men as Henrotin and Watkins, of Chicago; Mundé, Cleveland; Polk, Lusk, Hanks, Boldt, and Vineberg, of New York; Sutton, of Pittsburg; Montgomery and Noble, of your own city; Kelly, of Baltimore; Haggard, of Nashville; Fry and myself, of Washington, and many others, as the saying goes, too numerous to mention.

In addition to vaginal hysterectomy, incision and drainage of pus collections, Kelly has recently reported thirteen successful vaginal operations for extra-uterine pregnancy. Hanks also recommends it after favorable experience. Members are all familiar with the work done by Durhssen, Mackenrodt and Martin of Berlin and others through an anterior colpotomy in the removal of small uterine, tubal and ovarian growths. Sutton is enthusiastic upon this method of operating, and thinks anterior colpotomy has a great future. Vaginal fixation in women unlikely to have more children, and shortening of the round ligaments through the vaginal incision, for the cure of the retro-displaced uterus has been highly extolled by Vineberg and

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Goffe, of New York. Old infected hæmatoceles and even freshly-formed hæmatoma are operated on through the vagina with the same ease and safety as large adherent pus collections, and in very much the same manner. A number of these cases were reported by Montgomery in a paper read to the American Gynæcological Society at its last meeting in Washington. When the diagnosis is in grave doubt, Henrotin, of Chicago, recommends pelvic exploration with the aseptic finger through the vaginal incision as a much more safe procedure than through the abdomen. If further operating be found necessary we may determine whether, in view of the recent developments referred to in this paper, the best good of each individual patient will be promoted by a vaginal or an abdominal operation.

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THE QUESTION OF PELVIC SUPPORT.*

By Joseph Eastman, M.D., Indianapolis.

Truth is stranger than fiction; and, as in the scarcity of gold and diamonds lies the essential element of their value, so the scarcity of truth magnifies its value when secured. The language of Holy Writ is still to us an inspiration, "Seek and ye shall find." All truly valuable progress is in direction from the complex to the simple, from the useless to the useful, from the false to the true.

In the evening twilight of the year and century, may we not profitably take an invoice to determine what we have in stock worth carrying forward to coming years or coming centuries; and, if, perchance, we shall see our idol falling, let us have consolation in the thought that "we have written as those who love humanity." Many of us can count by the score our patients whose pelves are minus ovaries and tubes; a few of us can count by the hundreds our patients whose pelvic organs have been reduced in number until nothing but bladder, ureters and rectum remain. May we not well inquire what means and methods have best borne the test of time (which proves all things), and left the

* Read by invitation. For *Discussion*, see page 57.

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pelvic viscera in so nearly normal position as to give in greatest measure pelvic strength and pelvic support to the remaining organs?

When about nine years ago I had occasion to re-open an abdomen ten months after I had removed a large fibroid tumor (in which case I had used a serre-nœud and adjusted the pedicle in the lower angle of the wound),I found that what was considerable of a pedicle at the first operation had been reduced to a string not larger than a pencil, composed of peritonæum enveloping a small amount of connective tissue, and even this had been broken by a sudden strain which the woman received while driving a buggy over a railroad crossing. While this had given way, the vagina had been retained at full length for such a time that the broad ligaments maintained a good support to the vagina, and recent examinations disclosed the fact that the patient, though a hard-working farmer's wife, now sixty years of age, has neither rectocele nor cystocele. In my earlier experience with panhysterectomy, the case which I just reported was continually in mind, and I made every effort to retain the vagina at full length by securing its union with broad ligaments. Notwithstanding this, as my patients have grown older, I find shortened vagina, and in many cases resulting cystocele, vesical tenesmus, or rectocele with lack of expulsive power in the lower portion of the rectum.

In many cases where I have first secured the uterine arteries and made a supra-vaginal amputation of the cervix, I have made effort to stitch cervix together and give it as much attachment to the broad ligaments as possible, to avoid shortening the vagina and resulting cystocele and rectocele. Surgeons who have visited my operating-room and lookers-on, when operating before medical societies, have asked, "Why use suture at all in the cervix," saying, "if let alone it would retract," as the turtle retracts its head into its shell. I have but one answer to such quesions, and that is, this retraction of the cervix is caused by a contracting and shortened vagina, and I desire to have the patient's bladder and rectum held up as nearly in normal position as possible. It took the first half of the century to put ovariotomy on an everlasting foundation. The removal of fibroid tumors has in twenty years, not only become a recognized operation, but hysterectomy has to-day, if anything, a lower mortality than ovariotomy. Let us reason together: The brave woman who has to give up her womb surely is entitled to the method which leaves her pelvis the strongest and least impairs the function of remaining viscera.

With these statements in mind and some experience to sustain our views, it might seem that ventral-fixation of the pedicle and a return

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to the serre-nœud of elastic ligature, would give better pelvic support. In a large per cent. of cases I believe this to be true, and believe that those who have opened the abdomen at a later period after fixation of the pedicle in the abdominal wound, have found nothing but a string remaining and in some instances that string broken. There are other advantages which I might digress enough to mention; mainly, that the two wounds, one pelvic, the other abdominal, are united in one; and if the serre-nœud is never tightened after the patient leaves the operating-table, there is no more danger of infection from the stump than from an abdominal suture, which is not twisted and tightened, and irritated by such daily twisting and tightening.

Twelve years ago I began doing vaginal hysterectomy for cancer, pelvic inflammation, and for cases of complete procidentia. In my first five efforts I used the dorsal position and either clamped with ordinary large hæmastats or ligated with silk, paying little or no attention to the attachment of the vagina to the broad ligaments for the purpose of preventing vaginal shortening and resulting cystocele In examining one of these patients from whom I had removed the uterus for complete prolapse, I found decided shortening of the vagina with large rectocele and cystocele to the extent that the patient never completely emptied the bladder, suffering so much from vesical tenesmus that she expressed herself as having been more comfortable when her womb was "out in the world." Emmet's operation on the perinæum and Stoltz's operation for the cystocele have rendered her comparatively comfortable. With these object lessons in mind, in cases of complete procidentia, instead of vaginal hysterectomy, I have made a modification of the operation devised by Mackenrodt, making a longitudinal incision in the anterior vaginal wall from a point one inch back of the urethra down to the uterine cervix; then going through the utero-vesical space into the peritonæal cavity, bringing the uterus forward to a position of complete anti-version and stitching it with silver wire, following up with the Emmet operation, which deals with the perinæum from the vaginal side. The results thus far have been very satisfactory, and, as I believe, if we limit its use to cases past the menopause, make a field for the Mackenrodt operation, which seems otherwise to have been doomed because of the bad results when pregnancy occurred.

Since 1886, whether using ligature or clamp in vaginal hysterectomy, I have taken pains to narrow and round the broad ligaments by a constricting ligature, not only dragging them forcibly down into the vaginal wound, but dragging the vagina upward as much as possible

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by suture as indicated on the photograph. I have, in most cases, found, by examination a year later, vagina drawn upward with a depression on each side where broad ligament has retracted. Where I have been compelled to leave the pelvic wound open packed with gauze a year or so later cystocele and rectocele have been found.

In vaginal hysterectomy I am careful not to drag the uterus down into my light, but crowd it off to one side while dealing with the broad ligament; always using the Sim's position (first having the rectum dilated so as to give us the largest amount of space). Thus, by this position, all the pelvic organs are on a traction upward, while the operation is being made, the whole procedure being diametrically opposite to the French method, which turns the vagina nearly wrong side out, shortens it one-third its length, then holds up the intestines with gauze instead of closing the wound, thus paving the way for cystocele and rectocele.*

In not less than one-half dozen cases of retroversion with more or less accompanying prolapse, I have sought to overcome the disorder by the so-called ventral-fixation using three silk sutures passed through the posterior wall of the uterus and including at times the sheath of recti muscle, the subserous areolar tissue and peritonæum. Examining these patients two or three years later, I find the uterus prolapsed and retroverted as badly as ever, and in one case where it became necessary to open the abdomen I found little evidence of any suspending ligament remaining. In very many operations in the peritoneal cavity for intestinal obstruction due to strangulating bands, we find that these bands are continually being elongated by the floating about of the ever-moving intestines. In each act of *inspiration* and *expiration* anything attached to the abdominal wall will be alternately stretched and relaxed so that ultimately it will become elongated to a mere strand and amount to nothing by way of supporting uterus and other pelvic organs. In confirmation of this statement report the following case.

Some two years ago I gave the method suggested by Thomas Keith a fair trial. I lifted the retroverted and prolapsed uterus by the ovary and tube, and as much of the broad ligament as I could drag up into the abdominal wound, fastening it there by suture and clamp, removing the ovary and outer end of the tube. A year later the patient returned with uterus as much prolapsed and retroverted as ever. I re-

* Jacobs, after returning to Paris, ties off his forceps with silk bought in Philadelphia, and closes his wound in some cases.—Personal communication, Dr. Palmer Dudley, N. Y.

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opened the abdomen, found the suspensory ligament, which I had made out of the mesovarium and fallopian tube very much relaxed, permitting the greatest freedom of descent and retroversion of the uterus. It may be said that the uterus held up for a time by ventral fixation, may relieve the patient of pelvic tenesmus. I would only answer that it can be claimed that the Hodge-Smith pessary has done all this, with more benefit and less danger to the patient and *is in evidence* that a *good* and beneficent means of relieving suffering originated in Philadelphia.

In many cases where I have removed ovaries and tubes and found accompanying retroversion, I have taken loop in the round ligament, thus shortening it, and for a time at least maintaining the proper axis of the uterus to that of the vagina. In this way I believe I have avoided the pain which continues in some cases for months, where the uterus sags backward, producing traction upon the pedicle.

Not wishing to digress from the subject of pelvic strength in women who have had to give up pelvic organs, I would say that the whole uterus contributes in no small degree to pelvic strength, even in cases where the adnexæ have been removed, and I cannot allow to go unchallenged the statement that the uterus is no longer of any use after ovaries and tubes have been removed. In not less than twenty per cent. of my cases menstruation has continued after removal of the ovaries and tubes. I believe that Mr. Tait concedes that it has continued in fifteen per cent. of his cases; therefore, in a considerable per cent. of cases the senile changes which occur at the menopause, when precipitated by an operation, are avoided; menstruation in these cases is evidence of pelvic life, and pelvic life means pelvic strength and pelvic strength often contributes to a healthy body and a healthy state of mind. Oh, the pitiful mental and physical wrecks, wafted to the gynæcological shores from the great ocean of life—wrecks which have gone down beneath the surging waves of unsubdued passion and unrequited love! Shall love be more or less requited when the wife has no passion to subdue? What wrecks are being wafted from the ocean of surgical aggression to the tender mercies of the family physician; let him answer for our instruction.

I have removed spleens, kidneys, gall-bladders, wombs, ovaries and fallopian tubes, always feeling after such effort that not quite a whole being is left, and am of the opinion that it should be a surgical law to remove no organ (except the vermiform appendix), unless the same be incurably diseased, and with diseased ovaries and tubes removed, the uterus in most cases by proper treatment can be saved to occupy

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its position as the keystone in the pelvic arch, maintaining its proper axis to that of the vagina, lifting up rather than weighting down.

When a woman places her confidence in the operator who has said to her that, "she owes it to her family to submit to a formidable operation in order that she may be restored to health and happiness," she often displays a heroism such as only a woman believing that she is acting in the interests of her home is capable of showing. The history of the world gives few examples of self-sacrifice and heroism such as the surgeon often finds in his womanly patients:

> So near to grandeur is their dust,
> So nigh to God is man,
> When duty whispers, low, "Thou must";
> Their hearts respond, "I can."

Much is due these self-sacrificing beings. By all the hallowed memories which cling to the words mother, wife, sister or daughter, let us resolve and ask high heaven to record the vow that we will submit no woman to an unnecessary operation nor avoidable mutilation, and that while during no operation will we remove a single organ which she might be permitted to retain:

> All are but parts of one stupendous whole,
> Whose body nature is, and God's the soul.

Some of these poor suffering creatures come to us in their desperation, demanding relief by surgery and it may, and often does become our solemn duty to reflect, "If this were my own wife, sister or daughter, would we do this operation or feed the nerve cells with a view of increasing her tolerance of pain?" The uterus, something like the parrot, will do the talking for every organ of the body and mimic every disease in the encyclopædia of pathology. The pelvic organs are as dials upon which are expressed the ills of the entire body in many of the neuroses. How few of us can positively differentiate between profound neurasthenia expressing itself in the pelvis and diseased pelvic organs causing and maintaining profound neurasthenia?

I have written this paper not for the purpose of inviting approval from this learned body nor in the spirit of the iconoclast but rather with the view of eliciting discussion; discussion, in which I may be the attentive pupil, anxious and willing to be instructed. In short, it was not written to please others but to please myself.

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We have sent forth a good deal of Seidlitz powder literature; literature which, read by the surgical aspirant, is as fuel to the fires of surgical aggression. While I have the utmost admiration for the bold surgeon, and think the very acme of the world's heroism was attained when Mrs. Crawford clasped hands with McDowell, and made her leap for life, my admiration for the bold surgeon warms into fervent flame of love when I learn that his boldness is always tempered by wisdom, and his conscience holds him firmly to the golden rule: "Whatsoever ye would that men should do unto you, do ye even so unto them."

We must never allow the glare of surgical triumph to swerve us from the line of duty to a fellow-being. In the beginning of our special work, many operations were new and untried; many things were published to the world which had not been tested in the crucible of time and truth.

> Had we but sought for truth, with all the zeal we sought for fame,
> We had been wiser in our day, and left a loftier name.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, December 2, 1897.

The *President*, E. E. MONTGOMERY, M. D., in the Chair.

The Question of Pelvic Support.

BY JOSEPH EASTMAN, M.D., INDIANAPOLIS.

(See page 51.)

DISCUSSION.

DR. J. M. BALDY: The gist of the appeal of our visitor seems to me to lie in the title of his paper, The Question of Pelvic Support, and is the only phase of the paper that calls for discussion. It is a question in surgery which has appealed to me for some time to be a most important one, and one which has been, to a very large extent, overlooked in the rush for new operations and the lessening of the mortality of old operations. We have looked too little to the ultimate results of the operations which we have come to look upon as settled and fixed for all time. Not only ovariotomy, but the still newer operation of hysterectomy, as referred to by Dr. Eastman. There is no question that the pelvic supports are interfered with by an operative procedure on either one or both broad ligaments, and that the pelvic support is interfered with very seriously, so much so that we produce not infrequently a condition of affairs which is probably one of the hardest that we gynæcologists have to treat; viz., a prolapse of the vagina to a greater or less extent. The broad ligaments being gone, it stands to reason the cul-de-sac portion must sag more or less. The more damage done to the broad ligaments, the more they are left alone after they have been damaged, the less chance for support and less chance that remaining organs are going to maintain their normal relations. Beyond any question a uterus amputated, the cervix allowed to retract means that the vagina retracts, contracts in the involution and shortens. The same follows complete hysterectomy, the cervix having been removed, no means having been taken to prevent this condition of affairs; the same thing follows hysterectomy by vaginal or abdominal route to a greater or less extent, and that is a more or less serious matter to the patient, and oftentimes to the family relations of the patient. The question of how to prevent this con-

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dition of affairs, it seems to me, is simply a matter of detail of the technique which we have all come to look and depend upon, and Dr. Eastman has pointed out in various ways methods which can be adopted and which are perfectly feasible in practical work to prevent or at least to lessen the number of these cases which are occurring daily, and which we are all seeing in our practice, and which are coming to us from the practice of other gentlemen. Vaginal hysterectomy is pre-eminently the operation which produces most injury in this direction. It is an operation which, by almost all gentlemen favoring this method of procedure, is an operation of open wounds, wounds to heal by granulation, there is no effort at support of any kind. Removal of nature's mainstays and allowing tissues to sag down from above. The operation of vaginal hysterectomy without an effort at closure, treated by packing, is the condition which above all others predisposes to subsequent prolapse.

The operation of hysterectomy through the abdomen, allowing cervix to retract and disappear, is also a condition which predisposes to a prolapse. To minor degree ovariotomy is the same thing, followed by retrodisplacements, which are not rectified at the time of operation, or rectified in such a way as to be imperfect. In vaginal hysterectomy, if we go back to the days when we did not use clamps, before the days of the present school of French operation; if we go back to the days when we were doing good vaginal hysterectomies, when we were sewing up our lacerations, replacing tissues, bunching them together and stitching them, we were arriving at results in preventing prolapse, to which we will have to return, and as Dr. Eastman has remarked, numbers of the hysterectomists of to-day are returning to this ground.

Such work is infinitely easier of accomplishment from above than below. It is a simple matter to place ligatures in the broad ligament so as to take in the ovarian artery and round ligament in one bunch instead of using multiple ligatures for the same purpose, which is the recent fad, and which I have always held is exceedingly bad teaching. It allows a long, stretched-out broad ligament, and dropping down of the vagina. By the old bunched method of ligature, but two ligatures are required on each side of the uterus in hysterectomy, and the consequent shortening of the broad ligaments hold the vaginal vault up to a higher level. If now, in addition to this, the ovarian stumps are attached from each side to the cervical stump in the centre, better support is secured to the vaginal vault than primarily existed. Or, the cervical stump may be stitched to the abdominal wall itself in some cases in order to secure still better support.

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DR. J. M. FISHER: The two things that impress me most in Dr. Eastman's paper are the frequency of cystocele and rectocele following the removal of the uterus, and the fact that after the removal of the appendages in a certain proportion of cases the occurrence of menstruation indicated "life," and therefore a condition of the pelvic structures unlike the atrophic changes which generally take place in connection with these structures after more radical procedures. The uterus no doubt is a very important structure as a part of proper pelvic support. In our study of this subject we must consider all the pelvic organs in their mutual relation to each other, as well as the means by which they are held in position. We know that these structures are embedded in the pelvis in a mass of connective tissue, that they are covered by peritonæum, and that below the peritonæum and connective tissue is the continuous muscular vaginal roof. Now, then, the pelvic peritonæum is very largely concerned in the support of the pelvic structures. In the cadaver, after removing the connective tissue and the anterior vaginal wall, the peritonæum still holds all of the structures that are attached to it from below—the uterus, bladder, and a part of the rectum—in proper position, and this obtains even after the pelvic diaphragm has been removed. This is due to the close attachment of the peritonæum to the tissues overlying the brim of the pelvis laterally, and to the abdominal wall, upper portion of the bladder, and the urachus anteriorly, and to the rectum and the structures overlying the sacrum posteriorly. The mass of connective tissue below the peritonæum increases upon approaching the sides of the uterus, and here measures from three-fourths to one inch in thickness, forming an elastic cushion that has much to do in maintaining the uterus and other structures of the pelvis in their normally mobile positions. The most important supporting structure of the pelvic organs, however, is the vaginal roof. This is well illustrated by introducing a Sims' speculum and retracting the posterior vaginal wall without resulting descent of the anterior vaginal wall. The muscular structure of the vagina posteriorly enters into the formation of the utero-sacral ligaments; centrally it is continuous with the cervix, while anteriorly it is very closely attached to the base of the bladder and is indirectly held in position by the attachment of bladder to the posterior surface of the symphysis. It is quite clear to my mind that pelvic support depends very largely upon the continuity of this vaginal roof. In extirpation of the uterus the integrity of this structure in its continuity is destroyed and more contraction or retraction of its broken musculature takes place with consequent loss of support and resultant rectocele and cystocele. Another very important

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point to consider is, that in removing the appendages the ovarian arteries alone are tied, but in removing the uterus in connection with the appendages both ovarian and uterine arteries are ligated, thus cutting off the blood supply within the pelvis more or less completely, resulting in atrophy of the remaining supporting structures, and a consequent tendency to prolapse of rectum and bladder.

Dr. SHOEMAKER: It is interesting to note the development of thought in this relation. Formerly we heard everything of pelvic support from below. First, by the pessary, then by the perinæum operation. Then came suspension from above, and now, in the course of development, we are learning that we must use both methods to secure good results.

Dr. JOSEPH EASTMAN: I have very little to say except to thank the gentlemen who have kindly taken an interest in the remarks included in the paper. I am quite sure that the point I attempted to make in reference to what the Frenchmen have attempted to teach us, as Dr. Baldy remarked, is appreciated now all over America. Those gentlemen have really carried coals to Newcastle. We are beginning to realize that what they have taught us we must unlearn, and go back to our former methods and use common sense, closing a vaginal wound whenever we can, precisely as we would close an abdominal wound.

I thank the gentlemen again for their attention.

The Best Way of Treating Pus Collections in the Pelvis; The Abdominal vs. the Pelvic Route.

BY JOSEPH TABER JOHNSON, M.D., WASHINGTON, D. C.

(See page 43.)

DISCUSSION.

Dr. W. EASTERLEY ASHTON: I listened with a great deal of interest to Dr. Johnson's paper, which has certainly covered the ground of vaginal operations very thoroughly, and represents very clearly the views of those gentlemen who are enthusiasts in that work. The question asked by Dr. Baldy, previous to discussion, that Dr. Johnson define what he means by accumulations of pus within the pelvis demanding operation is, I think, a very timely one. In other words, the doctor speaks in his paper of suitable cases for the vaginal route; this is just where the difficulty arises, as it is impossible to say which are and

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which are not the suitable cases. Now let me illustrate: About ten days ago I operated upon a young girl from the interior of the State. It looked like a very clear case of pus within the pelvis, like all these pus accumulations involving the tubes, they were post-uterine. I don't know that I have ever met with a case where the accumulation of pus was not low down. This case apparently was a very simple one. When I opened I found double tubo-ovarian abscesses with the head of the colon and appendix adherent to the bladder. The adhesions were so strong that I was obliged to make an opening into the colon. On the other side the tubo-ovarian abscess was adherent to the ileum, I had to open up the ileum and stitch. This is a case in point; it was impossible for me to know that the colon was attached to the bladder, it was impossible for me to know that the ileum was attached on the left side, and it would have been impossible in this case for a surgeon to operate by the vaginal route and do good surgery.

In regard to the question of shock following abdominal sections, I believe that is a question which depends upon the operator. There are operators who are very slow in doing an abdominal operation, and their patients are certain to have shock; in other words, an operator who is expert and experienced enough to do the majority of these operations within thirty minutes has no reason to fear shock. The abdominal operation is a harder operation, it needs more care than the vaginal operation for the reason that the vaginal route is incomplete. The vaginal route does not pretend in the majority of instances to get rid of the disease, but simply to open up and get rid of free pus and then to drain, consequently under these circumstances the operation is a short one—it is about on a par with opening an extraperitonæal abscess, due to appendicitis—simply open, flush and drain. The question of shock therefore in abdominal cases depends on the expertness of the individual operator, and I do not think it is fair that the abdominal route should be held up as one liable to be followed by shock. Now Dr. Johnson speaks of patients objecting to the abdominal incision. Personally, I have never had any trouble of this kind. My patients, as a rule, are intelligent, and take my advice. I think some men control their patients better than others. As a rule, if the surgeon controls them well they are perfectly willing to submit and have confidence in him. In reference to mortality, I believe mortality in abdominal operation depends not so much upon shock as upon the character of the pus. It is a well-known fact that in the majority of tubal abscesses the pus is sterile. I believe in a large number of cases in which the pus is examined this will prove to be the case. I always feel after a pus operation

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that the outcome of the case can be predicted on the result of bacteriological examination; if the pus is sterile the patient will get well; if not, I believe, in the majority of cases, nothing in the world will save the patient. Again, the doctor speaks of fæcal fistulæ following the abdominal operation. It is unfair to compare the two operations, becauses they have nothing in common. I believe here, too, it is a question of the personality of the operator. If the operator does his work carefully by the abdominal route, making use of the Trendelenburg posture, examining carefully all suspicious spots upon the bowel, he will get no fæcal fistulæ. I operate by the abdominal route, and have not seen a fæcal fistula for five years. Hardly a month passes, however, that I am not compelled frequently to suture the intestines before completing an operation, so that I believe in those cases where a fæcal fistula occurs it is faulty technique and not due to the operation itself. The doctor speaks of Dr. Kelly's statistics of thirteen cases of ectopic gestation operated on by the vaginal route without a death, which were reported in New York two years ago at the meeting of the American Gynæcological Society. This statement is incorrect, as one case died, a patient I was interested in. Dr. Kelly's real death rate therefore in operations by the vaginal route is one in thirteen.

As to Dr. Johnson's statement, that we must investigate the condition of the pelvis by first making an opening in the abdominal wall and introducing the finger into the abdomen: There are cases in which, even when it is done, we are unable to make a diagnosis, and we cannot tell the extent of the disease until we get well on in the operation. I have seen cases again and again where adhesions were so great and disturbance in the normal anatomy so marked that I simply did not know where I was. I could not even feel the uterus, and under these circumstances diagnosis was not clear until the patient was raised in the Trendelenburg posture and adhesions separated, when the normal lay of the land was determined. If this is so in the abdominal route, I would like to know how the doctor could make a diagnosis which is worth anything where the finger simply is introduced through the vagina?

Dr. Wilmer Krusen: I have enjoyed very much Dr. Johnson's paper, and feel that I can concur very heartily in the greater part of the paper as read. The selection of the method of treating suppurative diseases of the pelvis will be largely influenced by the dexterity and skill of the individual operator and the environment of the patient. Some of us who are young men are not always able to select the best surroundings for our patients. Sometimes we have to operate in private

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houses, and private houses are not always palatial. The first thing is to locate the situation of the pus. If the pus is tubal or ovarian, the inflammatory mass being in a position which is suitable for enucleation, possibly the abdominal route should be selected; but there are a large number of cases in which there has been suppurative perimetritis, where we have a pus collection bulging into the vagina, possibly from Douglas' cul-de-sac, or from the broad ligaments of either side. Where a large collection is bulging into the vagina, it does not seem rational, common-sense surgery to open the abdomen and to interfere with the barrier which nature has made, shutting off this pus collection from the general peritonæal cavity. If we have at heart the best interests of our patient, we will save her with the least sexual mutilation possible. In that case the vaginal incision should certainly be employed.

The question which Dr. Baldy has asked in regard to the position of the pus also suggested itself to my mind, whether Dr. Johnson meant tubal abscesses or all varieties of pus collections in the abdomen. In regard to the technique of vaginal incision, the method suggested by Laroyenne, of Lyons, of using a simple trocar and canula, or of using an aspirator, I believe should be condemned. A thorough incision should be made; an incision depending upon the position of the pus. In some cases it will be transverse, or in some cases anterior colpotomy should be selected and a free incision be made, either with a knife or the Paquelin cautery may be employed, incising the vaginal wall, and then, with scissors, enlarging the opening so that there will be no danger of not evacuating the pus. Frequently we have several purulent collections, and all of the pus cavities can be thoroughly evacuated, followed by thorough irrigation with salt solution or sterile water, and then drained with some special device, or packed with iodoform gauze. Another point that Dr. Johnson has called attention to has been the large mortality attending the selection of the abdominal operation in suppurative cases. This would be a cogent and powerful argument for the selection of the vaginal route wherever possible. We have heard many eloquent remarks this evening upon the question of pelvic support. If the pus can be evacuated through the vagina the question of pelvic support, which has occupied us during the former portion of the evening, will not give rise to so much difficulty.

Dr. J. M. Baldy: I was rather staggered by a good many statements in the paper of Dr. Johnson. I am very loath to accept as final the abdominal mortality of 15 per cent. to 25 per cent. I cannot think of a single pus case, barring those desperate acute puerperal ones operated on to save an immediate death, which has died in my hands

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in three years from either sepsis or shock, the only two causes of death in which the two operations can be compared. My mortality has been almost exclusively outside of this class of cases. I do not pretend to deny or excuse a mortality in my work. I simply contend that in this particular class of cases I have better luck, and my patients get well with better after-results if abdominal section is performed (for pus) than any other class of cases I deal with, and I distinctly repudiate for skilled men a 15-per-cent. or a 5-per-cent. mortality. I cannot discuss the mortality of bunglers in connection with the proper mortality of the operation. You can get statistics all over the world from men who do not know how to operate; but that does not affect the proper mortality of the operation. The essayist says: "Why not in the future select more cases by the vaginal route than by the abdominal?" An old principle and saying is: "The proof of the pudding is in the eating," every man is going to go on his own experience irrespective of what any one can tell him, and the man who has a large experience with a certain operation, perfectly eminently satisfactory, is not going to leave it for a method which, in his experience, has not proven satisfactory to himself or his patients, and the fact that so large a proportion of operators are holding out against the vaginal craze, and the fact that so large a proportion of those who are doing vaginal work are coming back to the abdominal route, seems to me to answer the question that the vaginal operation is dying out, and will die out, except for acute or chronic accumulations of pus in the pelvis outside of tubes and ovaries, in which cases all classes of men agree on the vaginal route as the proper one. In this case the operation, however, is not an operation, unless you are ready to call vaccination an operation; it is merely the incision of an abscess, as simple as opening an abscess in any other part of the body. It is absurd to discuss the relative merits of opening an abscess and abdominal section for the removal of hopelessly diseased parts.

As to the question of shock, I can only say, I don't see the necessity for the long abdominal operations Dr. Johnson speaks of; if I make my operation two hours long, I expect shock. If I send my patient to bed within half an hour or an hour, I feel if there is no septic pus she will recover; I look with confidence for the patient to die if the pus is virulently septic, I care not what method is used. Nothing we can do will avert this termination.

I was astounded at the statements made that there are no sequelæ following vaginal sections. When I look back and think of Jacob's admissions, and glance over his papers and see vaginal and rectal

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fistulæ, and see Segond's papers and his admissions, and that of all other vaginal operators, it is a matter of astonishment that the statement is made to-day that there are no sequelæ. Sequelæ following abdominal operations do not begin to compare in frequency or seriousness. Hernias, I admit, but they are unquestionably largely lessened in number. Fæcal fistulæ, I have seen but one in five years. In that case I saw the fistula, before operating, with rectoscope. I operated to get rid of it. Fæcal fistula followed my failure to close the opening, so I curetted and drained, and packed, etc., and it got well. The patient recovered and gained fifty pounds. To-day she is a well woman, attending to her duties as a wife and bringing up her family. Vaginal work could have done nothing.

There are dozens and dozens of such cases where you cannot make an absolute diagnosis. It is very pretty to say this class of cases are adapted to the vaginal route, and this class is applicable to the abdominal route; but I defy any man to make these fine distinctions in a large proportion of cases. It is an impossibility, yet we find the vaginal men making claims that they can make this distinction when the rest of us acknowledge that frequently we cannot do it, do not attempt to do it.

Dr. G. E. SHOEMAKER: Dr. Johnson, in his admirable and very interesting paper, referred to a class of statistics which have come from general hospitals in regard to the high mortality in pus cases, but these statistics should not pass without comment. In many general hospitals there is no trained abdominal surgeon operating, and all men, with all kinds of training, are doing occasional abdominal surgery. In other hospitals, for example, in three active hospitals in this city, men not on the hospital staff at all are allowed to operate upon patients occupying private rooms, and their statistics go to swell the general mortality of those hospitals. Reports from such hospitals do not represent the work of good, thoroughly trained abdominal operators, who are operating in separate rooms, with separate assistants and instruments, and with a separation of cases from the general sources of infection which obtain in a large general hospital. I was much surprised at the general statement that there is a mortality of 15 to 25 per cent. in pus cases. Certainly that has not been my own experience. I feel that a pus case which is capable of enucleation is pretty sure to get well. After a very large pus accumulation I think many men will admit that drainage through the vagina, at least temporarily, is the wisest preliminary procedure.

Among cases in good hands, a 15 to 25 per cent. mortality must be

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distinctly understood as not referring to all pus cases, but to a small number of desperate, profoundly septic, almost moribund cases, of which an operator will not see more than two or three a year.

Dr. EASTMAN: I have been very much interested and instructed by this discussion. I do considerable vaginal work in cases such as those to which Dr. Johnson has referred. I am in the habit of operating in the Sims position. Previous to operating I have the nurse, with the hand folded in the shape of a cone, dilate the rectum so as to pass over the knuckle and in that way obtain more space. I have a short, wide speculum and manipulate through an incision which I make in the posterior vaginal cul-de-sac. I am glad the doctor shied off from the idea of taking out the uterus in all these cases in order to get drainage. He did not steer around another point, however, quite as handsomely, and to that I shall attempt to refer. He says these sacs are absorbed or pass away in some way after the pus is allowed to escape. What sacs are these, as Dr. Baldy asks; are they old sacs, or dermoid cysts, or plastic exudate formed around coils of intestine, or what are they? When we go through the abdominal route we seek to know what these sacs are, and attempt to remove them. I am quite sure when the operator goes by the abdominal route he removes pus tubes, removes ovarian abscesses, and he sometimes finds them as I have done, in such an advanced stage of decomposition that when we see them we dare not leave them. If we would simply open up and drain by abdominal route, leaving sacs, our results will show a lower primary mortality. I saw a distinguished operator of this city, operating in St. Louis, cut through the abdominal wall and drain with gauze, leaving sacs. The patient made a primary recovery. If we do not seek to remove sacs or break up adhesions by the abdominal route any more than by the vaginal route, we would have the same primary results. Each must be a law unto itself. Diagnosis is very difficult in these cases, and it is hard indeed to know in a given case which route is best. The Trendelenburg position which enables us to see as well as feel, enables us to do definite, careful work, and is essential to success in the abdominal route.

I recently made an operation in a small cottage house. I wanted the Trendelenburg position, especially to throw the meager light from the small window down to the bottom of the pelvis. I took a chair and improvised an excellent Trendelenburg position by turning the chair upon the table, using a blanket to pad the lower round of the chair-back. This prevents injury of the popliteal vessels. So this position can be obtained in any cabin.

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Dr. C. P. Noble: Collections of pus in the pelvis should be divided into several classes. In the first place, I think a sharp distinction should be made between pus accumulations of puerperal origin and those of non-puerperal origin, especially when caused by gonorrhœa or tuberculosis. The usual cases of pus tubes or abscesses of the ovary should be distinctly separated from cases complicated by large intraperitonæal collections of pus. Abscesses which have ruptured into the bowel or bladder, or which communicate with the skin or vagina by sinuses, must also be separated from the common class of pus accumulations. Extraperitonæal abscesses of puerperal origin form a distinct class to themselves. By separating cases of pus collections in this way it is possible to discuss the question of their treatment more intelligently.

Incision and drainage by the vaginal route is the best treatment for abscesses of puerperal origin, especially the extraperitonæal variety, because in this way most of these cases will be cured without the sacrifice of the uterine appendages. A large percentage of these abscesses are due to infection, which spreads along the lymphatics instead of along the Fallopian tubes, and in these cases the tubes are slightly, if at all, involved, and when drainage is effected a perfect cure will result in most cases. In some of them an operation to separate an adherent appendage may later be necessary; and, of course, in certain cases it may be necessary to sacrifice one appendage. This class of cases should be treated by vaginal incision; first, becauses it is the safest method of operating, and, second, because it conserves the integrity of the sexual organs. In exceptional cases it may be best to incise puerperal abscesses from the groin, or both from the groin and the vagina; but whenever possible the incision in the groin should be avoided, as the chances of a hernia following are very great.

Incision and drainage by the vaginal route should be employed in the treatment of large complicated cases of pelvic abscess—pus tubes and ovarian abscesses complicated by intraperitonæal abscesses. Women belonging to this class, as a rule, are greatly depressed in strength, and have been sick with septic processes for weeks when they come under observation. Abdominal section, with the removal of the abscess sacs in such cases, has a mortality of about 25 per cent. The mortality from abdominal section in such cases can only be brought down to reasonable limits by merely evacuating the abscesses and draining, leaving a radical cure to a future time, and even this treatment will be followed by fatal peritonitis in many cases. Incision and drainage by the vaginal route in such cases give excellent results. The

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mortality in my hands has been nothing, and even in a larger series of cases should not exceed one or two per cent. Some cases, especially suppurating hæmatocele and ovarian abscesses, may be followed by a perfect cure. All of the patients upon whom I have operated in this way have made good recoveries. Some of them are cured, others are so well that they will not submit to operation for adherent appendages, which undoubtedly are present, and still others the operation has enabled to recover from a very serious illness, and has rendered subsequent operation for tubal or ovarian disease much more simple, and practically without danger. In this class of cases a free incision should always be made, so as to secure perfect dependent drainage. If this is done, the incision will heal without sinuses. If the condition of the patients permit, that is, if they are not too prostrated to stand an operation of some duration, it is best to palpate the appendages carefully through the vaginal incision, and to endeavor to lay open freely pus tubes and other small pus accumulations. On the other hand, if the condition of the patients is very grave, one should be satisfied with evacuating the principal abscess sac.

Abscesses in the bottom of Douglas' pouch, whether ovarian or tubal, in young women desirous of embracing every opportunity to retain their fertility, may be treated by vaginal incision and drainage. Subsequently such cases may be treated by freeing the appendages, and by performing conservative operations upon them. I am not entirely sanguine of the results of this method of treatment, but believe it to be comparatively free from danger and well worthy of a trial.

Pelvic abscesses communicating with the bowel or bladder, or by sinuses with the skin, require special study. Each case must be treated on its own merits. When the communication of the bowel or bladder is high up, undoubtedly the abdominal route offers the best prospect for a cure. In other cases it is best to drain through the vagina, in some to perform vaginal hysterectomy, and in still others to combine abdominal operation with vaginal drainage.

Having considered these special classes of cases, we have the remaining ordinary chronic pus tube and ovarian abscess, which constitute by far the largest percentage. All such cases are best treated by abdominal section, and when both appendages are involved by the removal not only of the appendages, but of the uterus as well. It is unnecessary to repeat what has been so often urged in favor of the abdominal route over the vaginal route. The better control which the operator has over the field of operation, the lessened danger of infection,

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the greater ability to deal with complications of bowel adhesions or injuries, appendicitis, and similar conditions which so frequently complicate pus collections in the pelvis, are so manifest as to need no arguments. Another advantage is that in such cases with the perfection of modern technique it is possible to close the abdomen without drainage, and when the operation is completed the patient is put in a condition for immediate recovery. Whereas, when the vaginal route is selected, and either clamps or ligatures are employed for the vaginal hysterectomy, the operation is followed by sloughing, and the patient must depend upon gauze drainage to prevent the occurrence of septic peritonitis.

DR. JOHNSON: The question in regard to the mortality Dr. Noble was answering most beautifully when his time expired.

The "amazement" and "astonishment" expressed by several of the speakers that it had ever reached 25 per cent. might be set at rest by the confirming remarks of Dr. Noble.

I said in summing up that the mortality of abdominal operations in badly adherent low-down pus cases was between 15 and 25 per cent. Dr. Noble makes about the same statement. I quoted from the papers of half a dozen other gynæcologists, whom we all know, and whose statements are open to no doubt whatever, that the mortality in these cases is about 25 per cent., and to explain the point raised by Dr. Baldy, as to the class of pus cases referred to; I will reread one sentence in my paper: "The discussion then is centred chiefly upon operations for pus and old blood collections in the pelvis, situated for the most part low down, behind the uterus, and particularly in women who wish to have children."

It was that class of cases to which I drew attention, where adhesions are very great to the omentum and intestines, and everything above the brim of the pelvis, and are so bound together that these "thirty-minute" operations the doctors speak of as so common and successful in their practice cannot be among the class of patients where the mortality in the hands of just as good men is from 15 to 25 per cent. These remarks are not intended to apply to the great experts; they will, of course, have a less mortality than the average operator through the country, who furnished the bulk of the statistics.

It was to the class of cases known as "badly adherent" to which I drew attention, as being much safer to operate from below. If the vaginal operation saves lives, as I claim it does, why not perform it more frequently and save more lives? This operation being almost free from any mortality, it is my own experience as well as that

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of the surgeon quoted, who operates on these septic patients from below, that they get well permanently, and it is our belief that in the case of very ill and exhausted patients to whom you hardly dare give an anæsthetic; cases one cannot even properly prepare for the operation, if you simply puncture through the vagina, let out from a pint to a quart of horribly offensive pus, irrigate the pus cavity and drain with gauze, these patients will get will. The great majority actually do get well at the time, and afterward, if it is necessary to thoroughly eradicate the pus sac or break up adhesions, which did not absorb, as the patient is stronger and more vigorous, it can be done from above, with much less danger on account of the absolute freedom from pus, and the greatly improved condition of the patient. The questions raised by my friend, Dr. Ashton, as to shock, the personal element and the difficulties of diagnosis are all answered by the statement, that operations in non-adherent or only slightly adherent pus tubes by experts in thirty minutes are not followed by shock or death; but the great majority of operations in the United States are not done by skilled experts. We all know this.

The paper did not refer to these cases. In good hands they nearly all recover.

The medical journals teem with reports from the younger and less experienced practitioners, who detail with great minuteness their attempts to unite ureters they have torn, bladders and bowels they have lacerated. If they had operated from below and simply let out the pus, I claim, they would not have had these accidents, which they detail with so much eloquence.

These cases which Dr. Baldy and Dr. Ashton do so quickly and skillfully, and which always get well, are not the cases I refer to at all. I spoke of the bad cases, low down, behind the uterus, with great adhesions, in very sick women, and which are difficult to get at from above. The point made in regard to the accidents during the operations of Jacobs, Segond, Richelot, and others, are not the operations, either, which I was referring to to-night. They are doing vaginal operations by the hundred, for a great variety of causes. I especially condemned in my paper this indiscriminate removal of the uterus.

If they had done simply nothing except to let out the pus and irrigate their results would have been quite different. This is the important point which I make. As to diagnosis: One must have a gynæcological eye in the end of his finger for pus sacs. We can cultivate this sense of touch. If you let the pus out and do no damage with your finger, patients will recover surprisingly often. I do not think we

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should be pig-headed either way. The point I want to emphasize is that none of us should be bound by cast-iron rules in regard to these operations, but honestly and faithfully do what is best for each of our patients, with all the intelligence at our command, after considering all the facts and conditions in each case. We must suit the operation to the case, and not the case to one kind of operation.

Mr. President and Gentlemen—I thank you all most kindly for the compliment of inviting me to read a paper before your Society, for your polite attention, and for the consideration shown in its discussion, and I regret the important subject has not been presented in a manner to convert all my distinguished hearers.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

SOME OF THE DISADVANTAGES OF VAGINAL DRAINAGE FOR PELVIC ABSCESS.*

BY CHARLES P. NOBLE, M.D.,

Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia.

The advantages of vaginal incision and drainage in the treatment of certain classes of pelvic abscess have been presented to the Society from time to time. My own experience has been such that I have warmly advocated this method of treatment as against the radical abdominal operation; at the same time, it has seemed to me necessary to insist that the method is applicable only to a restricted class of cases (large or complicated pelvic abscesses, especially in acutely sick and in feeble patients), and that most cases of suppuration in the pelvis, perhaps 90 per cent., are best treated by abdominal section and the removal of the abscess sacs.

Certain disadvantages are inherent in the method of vaginal incision and drainage, and some of my own experiences from this standpoint are the subject of this communication. Every operator of experience knows that it is impossible in every case to arrive at an exact diagnosis of morbid conditions in the female pelvis, hence in employing vaginal incision it is found, from time to time, that the case is not a

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suitable one for this method of treatment, and consequently the operation is fruitless. In other cases, when the diagnosis of pus in the pelvis is correct, the pus may not be reached because it is accessible with difficulty from below. The difficulties may easily be such as to make it appear the more prudent course to abandon the effort at drainage from below, and to resort subsequently to abdominal operation. In my own somewhat limited experience with vaginal drainage, these two classes of cases cover the disadvantages which have been recognized.

The case of Mrs. L. is a typical one of a fruitless operation because of a mistaken diagnosis. Mrs. L. had been subjected to six abdominal sections before coming under my care. At various times her vermiform appendix, her ovaries, and her uterus, had been removed; and she had had operations for adhesions, and, according to her statement, for the removal of a gauze pad. She was apparently suffering from a localized peritonitis, with a temperature of 103° F. On examination, a mass was felt in the left half of the pelvis. It was supposed that this was an abscess about the pedicle ligatures. Desiring that she should not need further operative treatment after leaving my hands, I did not care to do an abdominal operation under the circumstances. Operations done in the course of an abscess with an acute peritonitis belong to the group of operations in which drainage is sometimes necessary. This patient, having had five incisions in or about the linea alba, had a scar at least an inch wide. I desired to excise this and leave her with an intact abdominal wall, consequently it seemed best to drain the case by the vagina, with the purpose of putting off the abdominal operation until she had recovered from the recent inflammatory attack. Subsequent events showed that the apparent history was a mistake, and the probabilities are that she was a hysterical maligner, who in some way made the thermometer register 103° F., although she had little if any fever. On making an incision into the left broad ligament, no pus was found, and exploring the broad ligament thoroughly with the finger it was quite evident that the diagnosis of abscess was a mistake. The folds of the broad ligament were separated almost to the upper border, when the absence of infiltration made it certain that an abscess was not present, and that the mass was of some other character. Some time subsequently the abdomen was opened, and the mass was found to be a small cyst in the broad ligament, presumably of inflammatory origin. The patient made a good recovery. In this case the vaginal incision did no harm and no good.

I was called in consultation to see a patient operated upon by another surgeon, for my advice as to the best method of treating a large

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mass of exudate which had formed in the pelvis subsequent to an operation for the removal of the right ovary and tube, and the attachment of the uterus to the abdominal wall. The patient had a history of continuous fever, and was evidently somewhat septic, which history, in connection with the extensive exudate present, made it probable that an abscess had formed about the pedicle ligature. It was thought wise to make an outlet for this pus in order to limit the exudate in the pelvis, and if possible prevent the healthy appendage from becoming involved in the peritonitis. For this purpose a vaginal incision was advised and practiced, and the fingers were worked through the mass of exudate without reaching any pus. Subsequently this exudate was absorbed. In this case the diagnosis of pus was erroneous. It is a question whether the operation was of service; at all events, it did no harm.

As a further illustration of the difficulties of making an exact diagnosis two puerperal cases will be reported. A patient was seen with Dr. Kerr, of Downingtown, some weeks after the birth of a child. She had had a continuous fever, and also some phlebitis in the right leg. At the time of my visit a large mass of exudate was present in the right half of the pelvis, which I thought was clearly a cellulitis and phlebitis as distinguished from an intra-peritonæal exudate. The persistence of the fever and the extent and density of the exudate made a diagnosis of abscess extremely probable. A vaginal incision was made, and the mass of exudate was penetrated with the fingers almost to the bifurcation of the iliac artery, but no pus was found. The operation had a distinctly beneficial effect upon the exudate, as the fever promptly subsided, and the exudate was rapidly absorbed. The patient made a good recovery, and has since remained well.

The second puerperal case was seen with Dr. Riesman some weeks after labor. She had had a mild septic fever, which had persisted in spite of the usual methods of treatment. When I saw her there was a distinct exudate in the left broad ligament, and also an adherent ovary and tube upon that side. The mass of exudate appeared to be due to a cellulitis, but it was not possible to exclude a complicating salpingitis. As the fever persisted and the exudate increased rather than diminished, an incision was made from the vagina, and the mass of exudate freely opened up with the fingers without reaching any pus. In this case also the effect of the operation was distinctly beneficial, as the fever soon disappeared, and the exudate was gradually absorbed. When I last heard from the patient, some months after her discharge, she was enjoying good health.

The two puerperal cases have been reported as illustrating the diffi-

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culty of making an exact diagnosis, although in both of them the drainage operation was distinctly beneficial.

In other cases, although the diagnosis may be correct, the results of the vaginal operation may be negative. Mrs. J. consulted me with a history that she had been discharging pus from the vagina for nine months, and from an ischio-rectal sinus for five months. She gave a history of repeated attacks of pelvic peritonitis. On examination, the uterus was found fixed in the pelvis by dense organized exudate, and a small mass was felt to the right and behind the uterus, from which pus was escaping through a fistula into the vagina. This condition was complicated by the ischio-rectal sinus. The patient was short and fat, and for this reason, as well as because of the communication with the vagina and the presence of the rectal sinus, it was thought best to try the effect of drainage rather than to do an abdominal section. Accordingly, the fistulous opening behind the cervix was freely incised, and the abscess sac in Douglas' pouch was washed out and packed, and at the same sitting the ischio-rectal sinus was laid open. While the ischio-rectal incision was healing, time was afforded to test the result of incision and drainage of the pelvic abscess, which was distinctly a failure. In a very short time the amount of pus discharged per vaginam was as great as before the operation. About three weeks ago an abdominal section was done, and a very densely adherent small suppurating ovarian tumor was removed from Douglas' pouch. The left appendage was normal. Because of the communication with the vagina and of the densely infiltrated condition of the tissues behind the cervix and the undoubted infection present, I was induced to use a gauze drain, introduced into the vagina by enlarging the existing fistula. This patient is making a good recovery. The vaginal fistula has not yet closed, but the amount of discharge is rapidly lessening.

Incision and drainage failed in this case because of the conditions present. I doubt very much whether the cavity of this suppurating tumor would ever have closed by packing and irrigation, and certainly it would not have done so without repeatedly enlarging the fistula and keeping it packed for months. The case is an illustration of the fact that removal of the abscess sac is the only cure for certain cases of pelvic suppuration.

The last case which I will report is that of Mrs. K., who was referred to me after the subsidence of an attack of pelvic peritonitis. She told me that she had been in bed more than half the time for the last seven years. The pelvis was choked with fresh exudate, and a large mass filled up the left half of the pelvis. Operation was advised, but

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before her admission to the hospital she had a relapse, and was extremely ill with pelvic inflammation. Upon admission to the hospital she was so feeble and anæmic, and the local conditions evidently were such as would render a radical operation tedious and difficult, that I felt it best, if possible, to tide her over the crisis by drainage, although the size of the mass upon the left side indicated that she had a suppurating ovarian tumor rather than a pyosalpinx. Upon making an incision from the vagina, a large amount of clear fluid was evacuated, but no pus. I concluded that I had opened a non-suppurating ovarian tumor, and I was unable to feel any other mass which suggested an abscess. The incision was packed, and the patient suffered in no way from the incision, which shortly healed. The persistence of fever rendered a radical operation imperative, and an abdominal section was done. I found a small multilocular ovarian tumor, part of which contained pus; also a double pyosalpinx. The uterus and its appendages were removed. In this case the rectum was so wounded that I felt it was unsafe to close the abdomen without drainage; accordingly a gauze drain was placed from the vagina. A small fæcal fistula formed and the pelvis suppurated, but the patient is making a good recovery.

In this case the impossibility of making an exact diagnosis through the vaginal incision made the drainage operation fruitless; but it did no harm, and showed the absolute necessity for a radical operation in spite of its well-known risks under such unfavorable circumstances.

When a method of treatment is comparatively new, its advocates usually describe its advantages in glowing terms, and say nothing of its disadvantages. Its opponents, on the other hand, decry the operation, but as they do so without experience, their testimony, as a rule, carries little weight. As I have advocated this method of treatment, I thought it might be of interest to the Society to relate these instances of failure or partial success. They carry the lesson that disappointments will frequently follow a resort to vaginal incision and drainage for supposed pelvic abscess. The frequency of failure will of course depend upon the relative accuracy of diagnosis in these cases.

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PREGNANCY AND LABOR COMPLICATED BY ANTERIOR FIXATION OF UTERUS.*

By G. M. Boyd, M.D.

Lecturer on Obstetrics to the Medico-Chirurgical College; Physician to the Philadelphia Lying-in Charity.

Ventro-fixation was welcomed not many years ago, for we felt that at last a positive means for curing the retroverted uterus had been found. The early operations surely accomplished the purpose sought for. The uterus was firmly fixed to the anterior abdominal wall, by sutures, in some cases, in addition to this, extensive scarifications, producing strong fibrous adhesions. The results of these operations were most gratifying. The symptoms complained of disappeared rapidly. All went well until we began to hear of complications developing during pregnancy and labor.

Complications causing so much obstruction by the firm anterior wall of uterus that at times the more serious operations in obstetrics were demanded in order to accomplish the delivery. With the news of these complications, cases which only time could produce, we find now the various operators modifying the procedure, some using a single stitch to fix the uterus, and others removing all sutures in two weeks, and third including only the peritonæum in the tension suture, so on, we might mention the various operations, all having the purpose of obviating the complications in future pregnancy and labor. Anticipating the danger of future trouble, some operators have made the attachment to abdominal wall so slight that I fear a careful examination in a certain proportion of cases might find the uterus just where it was before the operation and the patient complaining again of her old symptoms.

I admit that the uterus, fixed by suitable ligamentous attachment to the abdominal wall, may not disturb future pregnancy and labor, but that the operation should be done in the right way and that it should be carefully considered where pregnancy is possible the following cases will illustrate.

Case I.—Mrs. W. was admitted to the Philadelphia Lying-in Charity June 9, 1897. She has had one child at term. Two years ago

* Read. For *Discussion* see page 109.

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ventro-fixation was performed. She has had two miscarriages since then and she comes to us pregnant for the fourth time, the uterus now carrying the fœtus to term. She states that she fell in labor eighteen hours prior to admission and that her physician had twice applied forceps without success. The patient is much exhausted from the long labor, she has fever and rapid pulse, the fœtal heart could not be heard. Internal examination revealed the cause of the dystocia. The posterior lip of the cervix was drawn up and posterior, the anterior cervix and uterine wall acting as an obstruction to the engagement of the cephalic extremity. With the long labor, death of infant and excessive moulding of the presenting part, it had at last made some descent. The patient, in bad condition, was anæsthetized and the œdematous and injured cervix was first dilated, forceps were now applied to the much moulded head, and with not great axis traction she was delivered, infant weighing seven pounds. The lacerated cervix could be now easily felt, and the thickened anterior wall of the uterus which caused the obstruction.

After as careful a toilet as was possible with the patient in so bad condition, she was put to bed. As might have been expected, she deveoped a rapid putrid infection, with high temperature, rapid pulse and offensive lochia. The anterior lip of cervix sloughed off, and with this a portion of the floor of the bladder. A vesical incontinence was now explained in a fistula.

Slowly she improved, but it was not until one month after her delivery that she was in condition to make a repair of the bladder injury.

The fistula was found high up to the left side of cervix and communicating with an extensive laceration of the latter. It was first necessary to repair this laceration, then the fistula was closed with silver wire sutures. The stitches were removed in two weeks and patient discharged in good condition.

Case II.—Mrs. W., aged 33 years, was admitted to the Philadelphia Lying-In Charity January 15, 1898. She has had three children, all living. Three years ago one ovary was removed and ventro-fixation performed.

She menstruated regularly after this operation until May 18, 1897. After missing her first period she had a show every two weeks for three months. Fœtal movements were felt in September. In December there was a show, with great pain, for three weeks, and at the same time there was lumbar pain and irritation of bladder and ureters. A constant dragging pain in the sacral region, with lancinating pain at times. Both inguinal regions were the site of continuous pain, but it

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was most severe in the left side and down the thigh. On admission she was found to be pregnant seven and one-half months. The ovoid was presenting by the breech. Internal examination was accompanied with pain, the cervix was difficult to reach, having been drawn upward and posterior. The anterior wall of uterus was much thickened and seemed to offer an obstruction to the engagement of presenting part. External version was performed and the patient kept in bed with lateral compresses to the uterus. We succeeded without much difficulty in keeping the head at the pelvic inlet.

Fearing that to allow the patient to go to term we might have greater trouble, it seemed wise to induce labor at the eighth month. This was carried out January 29, 1898, by introducing two rubber bougies into the uterus. This was followed by slight pain and an unfortunate rupture of the membranes, the pains gradually became more frequent and severe, but were not accompanied with dilatation. After fourteen hours without any real progress the cervix dilated tc the size of a quarter dollar. We gave ether and terminated the labor with forceps.

Some difficulty was experienced in dilating the cervix.

During this operation it was noticed that although the fœtal heart had been closely studied during her labor, the waters were stained with meconium, we feared the death of the infant, and unfortunately we were right, the cord was pulseless and fœtal heart could not be heard.

I question now the wisdom of inducing labor in these cases, the difficulty of selecting the proper time, the uncertainty of the operation, and then, if complications develop in labor the infant is weak and will not bear the trauma associated with the possible instrumental interference.

In another case I would allow the patient to go to term, feeling that I could better deal with what complications might develop. The necessity of watching carefully a gestation where ventro-fixation is apparent, as a threatened miscarriage might indicate an abdominal section to liberate the uterus. Later, the induction of premature labor may be indicated where the presenting part is displaced and there exists marked thickening of the anterior wall of uterus. At term, our patient's condition may be a grave one. The case should be studied carefully, and if we find the pelvic inlet obstructed and the ovoid in a faulty position, the latter should first be rectified, making, if possible, the cephalic extremity present. If the cervix does not dilate, or the presenting part does not advance, manual dilatation, or extensive cer-

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vical incision may be performed, the labor then terminated with the forceps.

In exceptional cases this course will not suffice, and the Cæsarean section will have to be resorted to. The fallacy of allowing nature to take her course or to attempt the forceps operation without first dilating or incising the cervix, the first case reported illustrates. These remarks I hope will prompt a discussion, not of the various methods of ventro-fixation, but of the wisest methods of treating pregnancy and labor, should they be so complicated.

THE PUERPERIUM COMPLICATED BY TYPHOID FEVER.*

By Wm. E. Parke, M.D., Philadelphia.

Whenever fever follows the delivery of a woman, our first thought is that the patient has been infected, and in the absence of tangible evidence of some other condition which might give rise to elevation of temperature, our treatment should be directed to the disinfection of the birth canal. Text books enumerate many other causes besides sepsis which give rise to fever during the puerperium. Among these *constipation* is reckoned as a very common cause. *Emotion*, such as fright, anxiety and the like will occasion a sudden rise of temperature. *Exposure to cold* and *reflex irritation* are classed as causes of fever by some authors. The rise of temperature which accompanies engorgement of the breasts has been thought to be of a reflex character.

The puerperal state does not afford immunity from any of the febrile diseases to which the non-puerperal patient is liable, but there are certain diseases that are clinically of more importance than others, on account of their frequent occurrence, or lack of distinctive signs during the early stages of the disease. Among these *malaria* holds an importtant place and has doubtless been the cloak for many a case of sepsis. Indeed, it is widely believed that the lying-in woman is especially susceptible to the malarial poison. The *exanthemata*, *pneumonia* and *rheumatism* (arthritis) occurring in the lying-in woman present other symptoms in addition to the fever which serve to differentiate them from sepsis, although it is recognized that the latter two diseases may be septic in origin, and that sepsis is sometimes attended with a skin eruption. For some years back the journals have contained numerous reports of influenza complicating the puerperium. This disease is of

*Read. For *Discussion* see page 116.

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such protean form and at times so indefinite in character that to make an early differential diagnosis is very difficult or impossible.

The symptoms of typhoid fever during the first week bear a singular resemblance to those of sapræmia or septicæmia. These are rigor or chilly feeling, languor, headache, pains in the back and legs, loss of appetite, nausea, fever, increased pulse rate, etc. Taking up singly the symptoms of typhoid fever during the first week, it will be seen how impossible it is to differentiate them from those of infection in the puerperal patient. *Fever* is the chief symptom to which our attention is directed, and about this many of the others center. As in typhoid, this may begin with a chill or creepy feeling, and rises from day to day, with morning remissions, so it does in the mild infection. *Meteorism*, or *tympany*, is seen alike in typhoid fever and pelvic inflammation due to infection. The *skin* in both affections has a pallid appearance and a moist feel during the remission. At times the sweats are marked. The languor, headache, general aching of the whole body, increased pulse rate, scanty high-colored urine and loss of appetite are the accompaniments of fever and have no special diagnostic signficance. Even *diarrhœa*, which is usual in typhoid, may be also septic in origin. In short, the intoxication due to the absorption of toxins, whether they be from the typhoid bacillus or from wound infection, present no distinguishing features.

During the past year two cases of typhoid fever, during the puerperium, have come under my notice. One occurred in a woman in the out-patient department of the Lying-In Charity. I saw this patient only twice—first at the delivery, and again about five days later, when I was summoned by the student in whose charge she was, on account of fever. The nature of the disease was recognized at this time. I do not have the notes of this case. The second case occurred in my own practice, and the details of it are as follows:

Mrs. ——— was delivered in the evening of April 22, 1897, and a post-partum bichloride douche given, on account of a muco-purulent discharge which had been present during gestation. The injury to the perinæum was so trifling that no stitches were introduced. On the fourth day the patient had a slight chilly feeling, followed by a sweat. In the evening of the fifth day the temperature was 99 3-5°. The lochia were not offensive; there was no pain or soreness about the abdomen. On the eighth day the morning temperature was above 99° and the evening temperature above 100° (fractions of a degree not noted). The discharge was scanty, but not offensive. She had headache; the tongue was moist and fairly clean; the appetite good and

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bowels moved daily. It was thought on account of the temperature remaining about 100° that the patient was a trifle septic, and on the following day—the ninth—the uterus was washed out with a 1-2000 bichloride solution and a 25 gr. iodoform suppository inserted. On the tenth day the temperature in the morning was 101°, and on the eleventh day 102°, and in the afternoon of the same day 104°. The breasts were in good condition. There was no tenderness or bloating about the abdomen, tongue moist and slightly coated, appetite fair and bowels a trifle costive. This patient had a syphilitic history, as well as a leucorrhœal discharge, and it was still suspected that her elevation of temperature was due to a late infection. At this time—the thirteenth day—she was given ether and I curetted a large flabby uterus, obtaining only a small amount of débris, which was perfectly inodorous. The uterus was packed with gauze dusted with iodoform and boric acid powder. On the following day—the fourteenth—the temperature remained the same. Neither medicine, douche nor curettte seemed to have the slightest influence on the temperature. At this time she was taking strychnine, ergot and quinine—of the latter 21 gr. a day. On the fourteenth day she was given some calomel. On the seventeenth day I have noted that there was some hebetude, which was charged to the quinine, meteorism and a stool, secured by medicine and emema, was yellow in color and offensive; two rose-colored spots appeared on the abdomen, and on the following day many spots made their appearance and enlargement of the spleen was recognized. At this juncture a drop of blood was sent to the laboratory for examination, and a report of typhoid fever returned. The patient continued through a typical course of typhoid fever of more than average severity, the temperature reaching normal on the thirty-fifth day after confinement, or about four weeks after the onset of the disease. The bowels remained costive throughout.

The points in this case which militate against the diagnosis of septic infection are the late appearance of the fever, the absolutely negative result of the intra-uterine douche and curettement and the failure to obtain any detritus from the uterus. A blood examination at a little earlier period might have revealed the nature of the case.

The importance of making an early diagnosis in cases of sepsis cannot be overestimated, as upon this the treatment depends. If the cleansing and disinfection of the birth canal be delayed, irreparable damage may be done. In all doubtful cases, therefore, where fever is present, I consider it imperative to give an intra-uterine antiseptic douche, and, if need be, to curette.

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CONSERVATIVE SURGICAL TREATMENT OF UTERINE FIBROIDS.

By Wilmer Krusen, M.D., Philadelphia.

Instructor in Gynæcology, Clinical Assistant in Gynæcology at Jefferson Medical College; Assistant Gynæcologist and Chief of Dispensary for Diseases of Women, St. Joseph's Hospital; Gynæcologist to Charity Hospital.

A most distinguished abdominal surgeon has written "that in no abdominal operation is there a greater variety of method than in this for the removal of uterine myoma. At least twenty different methods are described by as many surgeons, and permutations and combinations of these are put forward with a freedom that is truly bewildering." The following cases illustrate the value of abdominal myomectomy, as suggested by A. Martin, of Berlin, and indicate the feasibility of this method in multiple interstitial and submucous growths, as well as in the pedunculated and subserous varieties. It is an operation which is the fruit of past experience and the seed of future advance in conservative work on the internal generative organs.

The writer is indebted to Drs. Montgomery and Fisher for their kind permission to use their cases in point in conjunction with his own.

Case I.—Mrs. G., aged 31, patient of Dr. John M. Fisher. She had the characteristic symptoms of fibroid tumors of the uterus. In September, 1895, an abdominal section was performed and enucleation of eight fibro-myomata varying in size from a medium-sized orange to that of an ordinary marble, the larger ones involving almost the entire thickness of the uterine wall. All the growths were removed through three surface incisions, which were closed by superimposed catgut sutures. The presence of a number of nodules indicated the existence of still smaller tumors, but these were allowed to remain. Both ovaries were partially cystic and were, therefore, resected, leaving the healthy structure. The patient made uninterrupted recovery. Menstruation was re-established seven weeks after leaving the hospital and has recurred at regular intervals ever since, continues three to five days, painless. A recent examination showed that the uterus occupied the normal forward position, was freely movable, and normal in size, form and density, with an entire absence of nodular formations. The patient is now in excellent general health.

Case II.—Mrs. H., aged 35 years and referred to writer by Dr. D. Braden Kyle. Patient had been married thirteen years and had had

* Read. For *Discussion*, see page 118.

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five miscarriages after from three and one-half to four and a half months' gestation. Menstruation regular, lasting three days; very painful. Operation on November 4, 1896, at St. Joseph's Hospital. Uterus retroverted with an interstitial fibroid in the fundus the size of a walnut, the appendages healthy. The fibroid was enucleated and the uterus fastened to the anterior abdominal wall. Convalescence uneventful.

Case III.—Mrs. D., aged 40. Referred to the writer by Dr. J. Chalmers DaCosta. Patient had been married thirteen years, never pregnant, complained of constant pain in lumbar region, leucorrhœa, etc. The uterus was found retrodisplaced and adherent. Operation May 4, 1897. Dilatation and curettement of uterus, enucleation of two small fibroid tumors from the anterior wall of the uterus and ventrosuspension performed. Recovery uneventful.

Case IV.—Miss W., aged 40 years, had suffered for seven years from fibroid growths. Operation by Dr. Montgomery at St. Joseph's Hospital, October 25, 1897. Abdomen opened, uterus drawn upward and the surface incised; thirteen growths varying in size from a pea to a walnut were enucleated. Five of these were of the submucous variety, and necessitated opening directly into the uterine cavity. Four incisions were made to permit removal of growths, the deeper ones extending into the uterine mucous membrane; these were closed with a double row of catgut sutures, bringing the muscular structures and then the peritonæum into accurate apposition.

Case V.—Miss A., aged 36. Operation by Dr. Montgomery on October 29, 1897. On opening the abdomen a large fibroid growth was found to arise from a pedicle from the fundus of the uterus, and that organ to contain eight other smaller growths. The pedicle of the mass was cut into and with a blunt dissector the tumor peeled out, the bleeding points were secured with hemostats and the other growths enucleated in a similar manner. The uterine walls were sutured with catgut, controlling the hemorrhage and bringing the peritonæal covering in apposition. Irrigation of abdominal cavity with normal saline solution and a large quantity left in the peritonæal cavity. Abdomen closed with figure-of-eight silkworm-gut suture. Recovery uneventful.

Case VI.—Mrs. M. V., aged 35 years. Operation by the writer at St. Joseph's Hospital, November 10, 1897. The patient had suffered from the usual pressure symptoms and menstrual disturbances of uterine fibroids, and was also constantly annoyed by a most severe reflex cough, which had resisted all previous treatment, but which was re-

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lieved by the operation. An abdominal section was made with the enucleation of six subserous and interstitial fibroids through five incisions into the uterine structure; the incisions were closed with fine catgut sutures. The right appendage wes resected. As the uterus had been firmly adherent in the pelvis, it was held forward by passing one suture through the lower angle of the abdominal incision and the fundus of the organ. Recovery uneventful and the present condition good.

The technique to be employed in the performance of myomectomy is as follows: First, the preparation of the abdomen by thoroughly scrubbing it with calcium chloride and sodium bicarbonate, then with alcohol and sterilized water. As there is always the possibility of the uterine cavity being opened in the procedure, it should be dilated, curetted and irrigated with an antiseptic solution prior to making the abdominal incision. This removes the diseased endometrium and drains the organ, thus favoring subsequent involution. As the mortality has been greater in those cases in which the uterine cavity has been opened, therefore every precaution should be taken.

The abdominal incision should be made in the median line below the umbilicus, and the lower end of it should not approach the pubes too closely, as the bladder in these cases is often elevated. Adhesions to the parietes, intestines, omentum and other organs should be carefully divided, the tubes and ovaries examined, the uterus brought forward and delivered, and gauze pads packed inside the abdominal cavity to keep the intestines in place and to catch the extravasated blood. If the appendages are diseased, or the tumor is edematous or fibrocystic in character, then the operator should perform supra-vaginal hysterectomy in preference. The number and position of the tumors having been ascertained, an incision into the uterine structure is made over the most prominent one, the white fibrous nodule is grasped with a double tenaculum, then with the finger and Allis dissector it is gently enucleated with as little injury to the uterine tissue as possible. As many incisions may be made as are necessary to remove all the growths, though frequently several may be removed through the same opening, and unsuspected nodules found as the operation progresses. If much hæmorrhage occurs, it may be temporarily controlled by encircling the neck of the organ with rubber tubing or by manual compression of the main vessels. Of course, in pedunculated growths the operation can be more easily and rapidly performed by transfixing and ligating the pedicle, if possible covering the stump with peritonæum to prevent future adhesions. Greig Smith has observed "that uterine

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stumps do not become so quickly quiescent as ovarian stumps," hence every precaution should be taken to prevent their begetting trouble.

After the enucleation is completed hæmorrhage should be permanently controlled by ligating the individual vessels when possible, which prevents the bleeding independent of the retraction of the vessels and shrinking of the uterine fibre, and by rows of buried catgut sutures placed from the bottom of the wound upward in succession, bringing the tissues closely together and permitting no space for the accumulation of blood. Finally, the peritonæal surfaces are carefully approximated by superficial sutures of fine silk or catgut.

The success of the operation depends largely upon securing perfect asepsis and complete hemostasis. Drainage is rarely necessary in these cases, unless there is oozing from extensive surfaces from which adhesions have been separated; then the gauze bag of Mikulicz drain may be used. After the irrigation of the abdominal cavity with normal saline solution, allowing a quantity to remain in the cavity, the abdominal incision is effectually closed with a row of figure-of-eight silk-worm-gut sutures. The dressings and after treatment are as in ordinary cœliotomy.

Myomectomy is indicated during pregnancy for fibroid tumors which complicate the development of the pregnant uterus, when the size and location of the tumor will permit. Among a series of cases tabulated by Pozzi, in many pregnancy continued and parturition was normal, even where interstitial and intra-ligamentous growths had been removed.

Gynæcology has frequently suffered from the unjust accusations of many of the profession, of unnecessarily sacrificing the internal organs of generation. If on these organs "depend all the specific properties of a woman's mind and body, all her nutrition and nervous sensibility, the delicacy and roundness of her figure, in fact, all other womanly characteristics," the surgeon should consider well before performing a sacrificial operation.

If patients can be prevailed upon to accept early operation there will be no interference with the natural functions after the extirpation of these growths. By the employment of these methods the conservatism of progress will be marked, and by sparing our patients the ablation of ovaries or the extirpation of the uterus, the amount of physical and psychical suffering so often the sequel of sexual mutilation will be much lessened. Gynæcologists should welcome any operation that will spare woman the nervous and vaso-motor disturbances associated with the premature menopause.

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A STUDY OF THE ACTION OF QUININE IN ONE HUNDRED CASES OF LABOR.*

By L. J. Hammond, M.D., Philadelphia.

I have been prompted to make a clinical study of the action of quinine in the parturient woman from being so frequently confronted with the statement from students that the labor has been so long continued, notwithstanding the fact that they have given quinine, and when questioned why such prompt delivery is expected after the administration of this drug, I am generally told that their text books strongly recommend it, and I believe it is taught in several of the medical schools of this city. My further reason, therefore, for endeavoring to determine its value as an ecbolic was largely to satisfy myself whether or not it possessed the merits claimed for it by many, or if not claimed for it, at least so long and universal a usage has seemed to establish in the minds not only of the students, but also of the practitioners throughout the obstetrical world, a precedent, which seems to place it in the front rank of agents which are supposed to increase the expulsive power of the uterus.

That it has so long and universally been administered to parturient women is not, I take it, sufficient argument either for or against it without an effort being made to determine just what amount of clinical difference obtains in a sufficient number of cases between uterine actions after and before its administration. In order to do this it seems to me necessary to secure enough cases similar in their action to accomplish this object. I have therefore endeavored to select one hundred cases as near alike in the behavior of their labor as was possible, a detailed study having been made of the character of the labor before—that is, the frequency of contractions and interval between the contractions. The drug was then given in ten-grain doses and repeated every half hour until thirty grains had been administered.

The first observation was made one-half hour after the administration of the drug and in the beginning of the second stage, and repeated

* Read. For *Discussion*, see page 112.

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every half hour until the labor was terminated. No case was used for the investigation where the second stage was so far advanced as to justify the belief that it would terminate within an hour, neither were any cases used which might be termed under the head of irregular labor—that is, those where labor was rapidly precipitated; nor were any used where there was any abnormality in the relative size of the fœtal to the maternal parts. There were a few in this group of cases where it was necessary to terminate the labor instrumentally. This was due entirely to my inability to determine from the earlier portion of the labor whether there was this relative difference in the size of the presenting part to the maternal.

The detailed method of making the observations was as follows: Duration of the contraction and the interval between contractions before the drug was given, which I have tabulated in one column, the hour of administration of the drug, duration of the contraction and the interval between contractions after administration of the drug have been noetd in another column; the duration of the contractions being calculated in seconds and the interval in minutes. The duration of the labor previous to the administration has also been noted, as well as the stage in which the drug was given, frequency of administration and frequency of observation, together with the behavior of the uterus after the termination of labor. These, I say, have all been noted in tabular form.

Both primiparas and multiparas have been used. In the case of the latter (m), an effort was made to determine the character and duration of the previous labors, but it was found to be so unsatisfactory that it was abandoned, the number of primiparas being thirty-eight (38), multiparas sixty-two (62).

There were never less than five (5) nor more than seven (7) observations recorded except in two or three cases, where four (4) were made, owing to the rapidity of the termination of labor, and as so large an amount of time would be consumed in reading these half-hour observations, I have endeavored to boil it down sufficiently to make clear the results of the investigations without too greatly wearing upon your patience, and with this object in view have endeavored to take the maximum number of seconds and the minimum number of seconds and the maximum minutes of interval and the minimum minutes of interval before the drug was given and compare them with the maximum number of seconds and the minimum number of seconds and the maximium minutes of interval and the minimum minutes of interval after the drug was given. Usually from three to five observations were made before administration of the drug, no observation being made

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during the very last moments while the head was passing through the vulva.

The study of the action of the uterus after being emptied of its product of conception was to note, first, whether any excess of bleeding, second, whether firm contraction immediately after it was emptied, third, whether any condition of hour-glass contraction took place.

As the report shows, but five evinced any tendency to excessive bleeding, and in no case was there any contraction of the lower segment (hour-glass) noted. In all the rest the uterus promptly and permanently retracted after prompt expulsion of the placenta.

In but one of the cases was the temperature, pulse or respiration sufficiently disturbed from the normal course to be noteworthy, and that was in the third case in the table, which shows pulse 110, repiration slow, 14, temperature normal.

It will be seen from the tabulated report of the thirty-eight (38) primiparas, thirty-five (35) show an increase in the frequency of contractions after the administration of the drug, two (2) show a decrease and one (1) no change.

We find upon further examination of the table that eight (8) of these cases show increase not exceeding one minute; therefore it will be fair to state that there was decided change in twenty-seven (27).

As to the duration of contraction, we find, of the thirty-eight (38) primiparas one (1) decreased and two (2) show no change.

Of the sixty-two (62) multiparas four (4) show an increase in the interval between the contractions and but one (1) show no change, while twenty-seven (27) show that the increase in the frequency of contractions did not exceed one minute.

On the other hand, a study of the duration of the contractions shows that four (4) of the sixty-two (62) cases show a diminution in the duration of the contractions after the use of the drug and in two (2) no change was noted.

In comparing the frequency of contractions in multiparas with those of primiparas, we find that the interval between contractions is slightly longer in the former than in the latter, while on the whole the duration of contractions in multiparas is longer than that of the primiparas.

I think it is important to state that these observations were made on women living in courts and alleys, mostly in the extreme lower section of the city, where the sanitary conditions, as well as the food stuffs used, were far below what is necessary for the safety and comforts of life. The district is said to be the most malarious in the city, and taken all in all, I believe this class of women to be an ideal one for securing

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the best results from any therapeutic agent whose benefits are supposed to be produced by its action as a tonic.

I realize the great difficulty in determining just what amount of the increase both in the duration and frequency of contractions that are noted in these observations are due to the action of quinine; first, because it is well known that as the second stage of labor progresses the interval between contractions is diminished, as well as the duration of the contractions increased. The prompt increase, however, in the duration of contraction and the diminution of the interval between contractions, which is so uniformly shown to have occurred in this series of cases, and in the hands of twenty-five (25) different observers, would seem to justify the belief that this drug does exercise a marked influence on the expulsive powers of the uterus, and I am quite satisfied that, given a woman whose muscular system is below par and an atonic condition of all the muscular structures of the body, I believe the administration of quinine, begun in the early stage of labor, will not only increase the expulsive powers of the uterus by its general tonic action, but it will also, through this same action, tend greatly toward lessening the dangers of septic invasion, which this class of cases is particularly liable to, owing to this impoverished condition of the system. In other words, it has been my experience to find that uterine inertia, which is said by some to be so common, is extremely rare, and is found only in the class of cases that I have here described. From a large experience, both in this class and a better class of cases, I am convinced that the so-called uterine inertia does not exist in any other class of cases than that where all the other muscles are tired, or, more properly defined, where there is general muscular atony.

As above intimated, these investigations were, many of them, made by the students of the University of Pennsylvania, though entirely under my supervision.

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	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
1.	M. 18 hrs.	a. 30 grains. b. ½ hourly.	a. Contractions occurred every 12 to 3 min., lasting 40 to 90 seconds. b. Begin. of 2d.	½ hr.	Every ¼ hour.	8.30 p.m. 90 sec. 8.46 60 9.03 120 9.18 80 9.30 120	9 min. 4 3 2½ 2	Prompt expulsion of placenta & firm contraction.	Normal.
2.	P. 9 hrs.	a. 30 grains. b. ½ hourly.	a. 10 m., lasting 28 s. b. Beginning of 2d.	½ hr.	Every ½ hour.	11.00 p.m. 60 sec. 11.30 60 12.00 48 12.30 80 1.00 a.m. 96 1.30 102	10 min. 10 6 5 2 1½	Normal expulsion and anteaction of uterus and placenta.	Normal.
3.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 10 m., lasting 20 s. b. End of 1st.	½ hr.	½ hour.	11.00 a.m. 40 sec. 11.30 40 12.00 m. 60 12.30 58 1.00 p.m. 80 1.30 80 After this almost constantly.	15 min. 15 10 6 6 2	Did not contract, free hæmorrhage	Pul., 110; resp., slow; temp., normal; frequent urination.
4.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 82 m., lasting 60 s. b. Beginning of 2d.	½ hr.	½ hour.	6.00 p.m. 80 sec. 6.30 80 7.00 78 7.30 90 8.00 120	5 min. 3 1½ 2 1	Prompt expulsion of placenta and contraction.	Normal.
5.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 52 m., lasting 65 s. b. Beginning of 2d.	½ hr.	½ hour.	5.00 a.m. 60 sec. 5.30 60 6.00 68 6.30 48 7.00 70 7.30 100	3 min. 3 8 2 1 1	Normal.	Normal.
6.	P. 24 hrs.	a. 10 grains. b. ½ hourly.	a. 8 to 3 m., lasting 30 to 60 s. b. Beginning of 2d.	½ hr.	½ hour.	8.44 p.m 60 sec. 9.17 30 9.46 55 10.04 30 10.20 40 10.30 30	3 min. 6 3 2 2 1½	Normal.	Normal.

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7.	P. 9 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 7 m., lasting 23 to 38 s. b. 2d stage.	½ hr.	½ hour.	10.00 p.m. 30 sec. 5 min. 10.30 35 5 11.00 45 3 11.30 58 3 12.00 53 2½ 12.30 80 2	Normal.	Normal.
8.	P. 14 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 9 m., lasting 38 to 24 s. b. 2d stage.	½ hr.	½ hour.	12.00 m. 38 sec. 6 min. 12.30 45 6½ 1.00 45 5 1.30 60 2 2.00 90 1½	Normal.	Normal.
9.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 1½ to 2½ m., lasting 40 to 90 s. b. Advanced 2d stage.	½ hr.	½ hour.	6.30 p.m. 68 sec. 1½ min. 7.00 85 1¾ 7.30 98 3½	Normal.	Normal.
10.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 10 to 4 m., 30 to 60 s. b. Beg. 2d.	½ hr.	½ hour.	6.00 p.m. 38 sec. 10 min. 6.30 26 7 7.00 30 3 7.30 68 5 8.00 60 4 8.30 80 3 9.00 88 1½	Normal.	Normal.
11.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 7 m., lasting 30 to 68 s. b. Beginning of 2d.	½ hr.	½ hour.	11.30 p.m. 38 sec. 3 min. 12.00 40 4 12.30 60 2 1.00 a.m. 60 2 1.30 80 1½ 2.00 80 1	Normal.	Normal.
12.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 1½ m., lasting 20 to 38 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 28 sec. 5 min. 8.30 38 5 9.00 70 3 9.30 90 2	Normal.	Normal.
13.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 4 m., 40 to 60 s. b. 2d stage.	½ hr.	½ hour.	8.30 p.m. 40 sec. 3 min. 9.00 56 3½ 9.30 60 2 10.00 90 1½	Normal.	Normal.
14.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 5 m., 38 to 4 s. b. Beg. 2d.	½ hr.	½ hour.	11.00 a.m. 38 sec. 3 min. 11.30 36 5 12.00 m. 50 2 12.30 30 2½ 1.00 40 2	Cont'd feebly, considerable bleeding.	Normal.

P.—Primipara.
M.—Multipara.

M.—Minutes interval.
S.—Seconds contractions.

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	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
15.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 8 to 12 m., 28 to 49 s. b. Beginning of 2d.	½ hr.	½ hour.	10.30 p.m. 20 sec. 11.00 20 11.30 28 12.00 20 12.30 35 1.00 60 1.30 80	8 min. 8½ 6 6 5 3 2	Normal.	Normal.
16.	P. 16 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 8 m., lasting 38 to 45 s. b. 2d stage.	½ hr.	½ hour.	4.00 p.m. 38 sec. 4.30 38 5.00 50 5.30 90	8 min. 5 3 2	.....	.....
17.	P. 11 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 5 m., 45 to 60 s. b. 2d stage.	½ hr.	½ hour.	6.00 a.m. 48 sec. 6.30 60 7.00 36 7.30 40 8.00 90	3 min. 2 2½ 2 1	.....	.....
18.	P. 20 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 7 m., lasting 30 to 60 s. b. 2d stage.	½ hr.	½ hour.	11.00 p.m. 38 sec. 11.30 22 12.00 60 12.30 58 1.00 60 1.30 68	4 min. 4 3 3 3 1½	Normal.	Normal.
19.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 2 m., 38 to 60 s. b. Beginning of 2d.	½ hr.	½ hour.	1.00 p.m. 40 sec. 1.30 48 2.00 60 2.30 60 3.00 62 3.30 80	3 min. 3½ 2 2 2 ½	Normal.	Normal.
20.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 11 to 1 m., lasting 30 to 50 s. b. Beginning of 2d.	½ hr.	½ hour.	6.00 a.m. 30 sec. 6.30 36 7.00 40 7.30 60 8.00 72	10 min. 8 8 2 3	Normal.	Normal.

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21.	P. 14 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 6 m., lasting 30 to 46 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 38 sec. 4 min. 3.30 45 4½ 4.00 30 2 4.30 60 1½ 5.00 68 2	Normal.	Normal.
22.	P. 20 hrs.	a. 10 grains. b. ½ hourly.	a. 1½ to 3 m., 50 to 68 s. b. Advanced 2d stage.	½ hr.	½ hour.	4.00 p.m. 60 sec. 2 min. 4.30 60 1 5.00 68 1½ 5.30 80 ½	Normal.	Normal.
23.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 5 m., 38 to 50 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 37 sec. 3½ min. 8.30 42 4 9.00 60 2 9.30 60 2½ 10.00 80 2	Normal.	Normal.
24.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 7 to 4 m., 45 to 60 s. b. Beginning of 2d.	½ hr.	½ hour.	10.30 a.m. 40 sec. 7 min. 11.00 38 3 11.30 60 5 12.00 60 2 1.00 80 1	Normal.	Normal.
25.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 10 to 1 m., 18 to 60 s. b. 2d stage.	½ hr.	½ hour.	4.30 a.m. 26 sec. 8 min. 5.00 38 6 5.30 40 3 6.00 38 1 6.30 60 1	Normal.	Normal.
26.	P. 8 hrs. M. —	a. 40 grs. 10 at time. b. ½ hourly.	a. 3 to 7 m., lasting 22 to 38 s. b. 2d stage.	½ hr.	½ hour.	6.00 p.m. 46 sec. 6 min. 6.30 54 3 7.00 40 2 7.30 60 1 8.00 56 1½	Prompt expulsion and contraction.	Normal.
27.	P. 14 hrs. M. —	a. 30 grains. b. ½ hourly, grains 10	a. 2 to 2½ m., 24 to 38 s. b. 2d stage.	½ hr.	½ hour.	10.00 a.m. 38 sec. 2½ min. 10.30 30 3 11.00 58 1½ 11.30 65 2 12.00 72 Constantly	Prompt contraction. Head could not mold; forceps	
28.	P. 20 hrs. M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 3 to 5 m., 22 to 48 s. b. Advanced 2d stage.	½ hr.	½ hour.	3.00 a.m. 26 sec. 5½ min. 3.30 32 5 4.00 22 6 4.30 48 2 5.00 78 1½	Normal.	.....

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	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
29.	P. 12½ " M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 12 to 7 m., lasting 12 to 30 s. b. Beginning of 2d.	½ hr.	½ hour.	10.00 p.m. 18 sec. 10.30 18 11.00 16 11.30 36 12.00 60 12.30 60 1.00 90	10 min. 7 7 3 4 1 1	Normal.	.....
30.	P. 24 hrs. M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 3½ to 6 m., lasting 40 to 63 s. b. 2d stage.	½ hr.	½ hour.	2.00 a.m. 42 sec. 2.30 62 3.00 42½ 3.30 70 4.00 70 4.30 72	4 min. 2 2½ 3 1 1½	Normal.	.....
31.	P. 11 hrs. M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 6 to 12 m., lasting 18 to 30 s. b. Beginning of 2d.	½ hr.	½ hour.	2.30 p.m. 22 sec. 3.00 22 2.30 40 4.00 46 4.30 60 5.00 38 6.00 60	11 min 3 5 7 4 6 1½	Normal.	.....
32.	P. 12 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 4 to 7 m., lasting 29 to 40 s. b. 2d stage.	½ hr.	½ hour.	7.00 a.m. 38 sec. 7.30 38 8.00 46 8.30 62 9.00 68 9.30 60	3 min. 4½ 2 4 1½ 1	Normal.	.....
33.	P. 13 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 6 to 10 m., lasting 12 to 30 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 18 sec. 3.30 16 4.00 28 4.30 36 5.00 60 5.30 60	10 min. 6 3½ 3 1 1	Normal.	.....

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34.	P. 8 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 3 to 7 m., lasting 16 to 28 s. b. 2d stage.	½ hr.	½ hour.	4.30 p.m. 28 sec. 5 min. 5.00 28 3 5.30 33 5 6.00 60 1½ 6.30 60 1½ 7.00 70 1 7.30 90 ½	Normal.	.....
35.	P. 15 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 5 to 11 m., lasting 18 to 38 s. b. 2d stage.	½ hr.	½ hour.	8.30 p.m. 20 sec. 7 min. 9.00 38 3 9.30 36 5 10.00 48 2 10.30 60 2 11.00 68 1	Normal.	.....
36.	P. 6 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 8 to 12 m., lasting 12 to 36 s. b. 2d stage.	½ hr.	½ hour.	7.00 a.m. 12 sec. 10 min. 7.30 26 10 8.00 38 6 8.30 38 5 9.00 50 5 9.30 62 2 10.00 90 2	Normal.	.....
37.	P. 8 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 8 to 15 m., lasting 10 to 48 s. b. 2d stage.	½ hr.	½ hour.	1.00 a.m. 15 sec. 10 min. 1.30 25 7 2.00 36 2 2.30 40 4 3.00 60 2 3.30 68 2	Normal.	.....
38.	P. 12 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 7 to 4 m., lasting 20 to 48 s. b. 2d stage.	½ hr.	½ hour.	4 00 a.m. 38 sec. 3 min. 4.30 60 3½ 5.00 80 1½ 5.30 74 2 6.00 80 ½	Normal.	.....
39.	P. 9 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 6 to 2½ m., lasting 18 to 50 s. b. 2d stage.	½ hr.	½ hour.	11.00 a.m. 18 sec. 6 min. 11.30 26 2 12.00 22 5 12.30 46 4 1.00 70 1½ 1.30 86 3 2.00 100 1	Normal.	.....

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	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
40.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 3½ m., lasting 38 to 60 s. b. 2d stage.	½ hr.	½ hour.	4.30 p.m. 40 sec. 5.00 42 5.30 60 6.00 52 6.30 68	2½ min. 3 2 1½ 2	Normal.	.....
41.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 13 to 48 s. b. Beginning of 2d.	½ hr.	½ hour.	9.00 a.m. 40 sec. 9.30 50 10.00 38 10.30 60 11.00 62 11.30 58	4 min. 2 2 2 2½ 1	Normal.	.....
42.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 4½ m., lasting 18 to 55 s. b. 2d stage.	½ hr.	½ hour.	1.00 a.m. 26 sec. 1.30 22 2.00 38 2.30 46 3.00 70 3.30 90	3 min. 5 2 2½ 1 ½	Normal.	.....
43.	P. — M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 10 m., lasting 12 to 38 s. b. 2d stage.	½ hr.	½ hour.	5.00 p.m. 20 sec. 5.30 18 6.00 32 6.30 76 7.00 90	8 min. 11 3 5 1	Feebly, excess of bleeding.	.....
44.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 6 m., lasting 22 to 58 s. b. 2d stage.	½ hr.	½ hour.	1.30 p.m. 34 sec. 2.00 45 2.30 26 3.00 60 3.30 72 4.00 70 4.30 86	3½ min. 4 2 1 4 2 2	Normal.	.....
45.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3½ to 5 m., lasting 20 to 36 s. b. 2d stage.	½ hr.	½ hour.	7.00 p.m. 27 sec. 7.30 36 8.00 29 8.30 48 9.00 60 9.30 68	3 min 2 5 1½ 2 1	Normal.	.....

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46.	P. — M. 22 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 2½ to 3 m., lasting 38 to 60 s. b. 2d stage.	½ hr.	½ hour.	3.00 p.m. 55 sec. 1 min 3.30 49 ½ 4.00 62 1 4.30 60 2 5.00 100 1 5.30 112 ½	Normal.	.....
47.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 5 m., lasting 24 to 58 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 33 sec. 2 min 5.30 38 3½ 6.00 56 2 6.30 62 1½ 7.00 80 ¾	Normal.	.....
48.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 4 m., lasting 12 to 48 s. b. 2d stage.	½ hr.	½ hour.	9.00 p.m. 18 sec. 5 min. 9.30 34 5 10.00 70 4 10.30 68 2½ 11.00 60 2 11.30 84 1½	Normal.	.....
49.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 11 to 3½ m., lasting 18 to 36 s. b. 2d stage.	½ hr.	½ hour.	1.00 p.m. 21 sec. 11 min 1.30 28 10½ 2.00 32 7 2.30 46 3 3.00 62 1½ 3.30 88 2	Normal.	.....
50.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 7 m., lasting 24 to 66 s. b. 2d stage.	½ hr.	½ hour.	10.30 a.m. 38 sec. 5 min 11.00 38 5 11.30 46 3½ 12.00 62 2 12.30 84 7½ 1.00 78 1	Normal.	.....
51.	P. — M. 14 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 8 m., lasting 20 to 58 s. b. 2d stage.	½ hr.	½ hour.	1.30 a.m. 18 sec. 6 min. 2.00 36 7½ 2.30 54 5 3.00 50 2 3.30 58 1 4.00 60 1½	Firm contraction after prompt expulsion of placenta.	.....
52.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 2 to 5½ m., lasting 22 to 43 s. b. 2d stage.	½ hr.	½ hour.	12.00 m. 28 sec. 3½ min. 12.30 26 2 1.00 34 1½ 1.30 56 2 2.00 58 1 2.30 60 1	Firm contraction after prompt expulsion of placenta.	.....

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	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
53.	P. — M. 20 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 2 to 5 m., lasting 36 to 50 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 38 sec. 8.30 36 9.00 54 9.30 38 10.00 60 10.30 70	5 min 5 2½ 2 1 ½	Firm contraction after prompt expulsion of placenta.	.....
54.	P. — M. 24 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 12 m., lasting 10 to 48 s. b. 2d stage.	½ hr.	½ hour.	11.00 p.m. 12 sec. 11.30 22 12.00 38 12.30 60 1.00 68 1.30 90	10 min. 7 10 6 3 1	Did not contract promptly.	.....
55.	P. — M. 18 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 2½ m., 28 to 50 s. b. Beginning of 2d.	½ hr.	½ hour.	5.00 p.m. 36 sec. 5.30 42 6.00 38 6.30 60 7.00 96	3 min. 3 1½ 2 1	Normal.	.....
56.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 3 m., lasting 18 to 40 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 17 sec. 3.30 22 4.00 46 4.30 38 5.00 60 5.30 102	4 min. 5½ 2 2 1 1½	Normal.	.....
57.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 5 m., lasting 12 to 28 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 10 sec. 5.30 14 6.00 28 6.30 56 7.00 64	8 min 5½ 3 4 3	Normal.	.....
58.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 3 m., lasting 22 to 40 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 28 sec. 3.30 40 4.00 36 4.30 42 5.00 72 5.30 68	7 min 9 5 2 3 1½	Normal.	.....

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59.	P. — M. 16 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 3½ m., lasting 12 to 48 s. b. Beginning of 2d.	½ hr.	½ hour.	1.00 p.m. 17 sec. 3 min. 1.30 20 1½ 2.00 13 1 2.30 58 2 3.00 70 2½ 3.30 80 1 4.00 96 ½	Normal.	.....
60.	P. — M. 16 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3½ to 4 m., lasting 28 to 42 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 38 sec. 2 min 5.30 38 3½ 6.00 50 1½ 6.30 46 1 7.00 67 1	Slight excess of bleeding.	.....
61.	P. — M. 21 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 4 m., lasting 60 to 48 s. b. 2d stage.	½ hr.	½ hour.	7.00 p.m. 60 sec. 12 min 7.30 58 7 8.00 68 3 8.30 62 3½ 9.00 80 1½	Normal.	.....
62.	P. — M. 14 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 8 m., lasting 18 to 80 s. b. 2d stage.	½ hr.	½ hour.	7.30 p.m. 19 sec. 7 min 8.00 17 8 8.30 23 3 9.00 48 5 9.30 86 2 10.00 80 4	Normal.	.....
63.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 3½ m., lasting 30 to 58 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 36 sec. 3¼ min. 3.30 38 2 4.00 47 ½ 4.30 63 3 5.00 60 1 5.30 79 1½	Normal.	.....
64.	P. — M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 5 m., 36 to 48 s. b. Beginning of 2d.	½ hr.	½ hour.	4.00 p.m. 43 sec. 4 min 4.30 41 2½ 5.00 58 4 5.30 48 4½ 6.00 67 2	Normal.	.....
65.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 5 m., lasting 26 to 40 s. b. 2d stage.	½ hr.	½ hour.	2.30 p.m. 23 sec. 9 min. 3.00 34 5 3.30 26 5 4.00 44 3½ 4.30 62 2 5.00 76 2½	Normal.	.....

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	Duration of Labor before Drug was given, and Duration of Previous Labor.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
66.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 6 m., lasting 22 to 60 s. b. 2d stage.	½ hr.	½ hour.	9.00 p.m. 20 sec. 9.30 16 10.00 43 10.30 68 11.00 63	6 min. 3 4 3 1½	Normal.	.....
67.	P. — M. 11 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 3 m., lasting 28 to 58 s. b. 2d stage.	½ hr.	½ hour.	8.30 p.m. 32 sec. 9.00 42 9.30 38 10.00 64 10.30 46 11.00 90	8 min. 4 3 3 2 3	Normal.	.....
68.	P. — M. 4 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 12 to 3 m., lasting 16 to 58 s. b. Beginning of 2d.	½ hr.	½ hour.	6.00 p.m. 18 sec. 6.30 26 7.00 19 7.30 48 8.00 60 8.30 58	10 min. 10 6 4 4 7½	Normal.	.....
69.	P. — M. 3 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 2 m., lasting 30 to 64 s. b. Beginning of 2d.	½ hr.	½ hour.	2.00 a.m. 38 sec. 2.30 26 3.00 48 3.30 64 4.00 66 4.30 92	3 min. 3½ 1½ 4 3 1	Normal.	.....
70.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 2 m., lasting 20 to 56 s. b. 2d stage.	½ hr.	½ hour.	10.00 p.m. 22 sec. 10.30 36 11.00 28 11.30 48 12.00 47 12.30 63	8 min. 8 5 2 1 1½	Normal.	.....
71.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 3½ m., lasting 12 to 52 s. b. 2d stage.	½ hr.	½ hour.	1.00 p.m. 16 sec. 1.30 24 2.00 40 2.30 46 3.00 52 3.30 78	2½ min. 4 3 2½ 3 2	Normal.	.....

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72.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 2 m., lasting 30 to 52 s. b. 2d stage.	½ hr.	½ hour.	10.30 p.m. 32 sec. 6 min. 11.00 54 4 11.30 46 5 12.00 63 3 12.30 80 1	Normal.	.....
73.	P. — M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 14 to 2½ m., lasting 16 to 60 s. b. 2d stage.	½ hr.	½ hour.	4.00 a.m. 18 sec. 11 min. 4.30 12 11 5.00 36 6 5.30 54 3 6.00 63 2½ 6.30 58 4 7.00 76 1	Normal.	.....
74.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 3 m., lasting 21 to 58 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 26 sec. 5 min. 5.30 38 2½ 6.00 24 2 6.30 60 2½ 7.00 58 1½	Normal.	.....
75.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 3½ m., lasting 32 to 40 s. b. 2d stage.	½ hr.	½ hour.	6.30 a.m. 32 sec. 2 min. 7.00 37 2½ 7.30 46 3 8.00 38 1½ 8.30 56 2	Normal.	.....
76.	P. — M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 2½ m., lasting 28 to 34 s. b. 2d stage.	½ hr.	½ hour.	6.30 a.m. 26 sec. 5 min. 7.00 32 3 7.30 43 2½ 8.00 62 3 8.30 44 1½	Contracted firmly and promptly.	.....
77.	P. — M. 8½ "	a. 30 grains. b. 10 every ½ hour.	a. 7 to 3 m., lasting 35 to 79 s. b. 2d stage.	½ hr.	½ hour.	2.30 a.m. 33 sec. 6 min. 3.00 37 6 3.30 46 3 4.00 62 3½ 4.30 68 4 5.00 68 3 5.30 99 2	Contracted firmly and promptly.	.....
78.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 2½ m., lasting 18 to 63 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 18 sec. 9 min. 8.30 28 4 9.00 16 5 9.30 24 2½ 10.00 46 3 10.30 68 1½ 11.00 92 1	Contracted firmly and promptly.	.....

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	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
79.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 43 to 56 s. b. 2d stage.	½ hr.	½ hour.	5.00 p.m. 38 sec. 5.30 54 6.00 49 6.30 39 7.00 63 7.30 84	5 min. 5 13 1½ ½ 1	Contracted firmly and promptly.	.....
80.	P. — M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 4 m., lasting 38 to 70 s. b. 2d stage.	½ hr.	½ hour.	2.00 p.m. 48 sec. 2.30 44 3.00 68 3.30 80 4.00 88	5 min. 3 4½ 2 1½	Contracted firmly and promptly.	.....
81.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 3½ m., lasting 12 to 58 s. b. 2d stage.	½ hr.	½ hour.	8.00 p.m. 17 sec. 8.30 17 9.00 40 9.30 38 10.00 60 10.30 60	3 min. 7 3½ 1 2 1½	.....	.....
82.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 22 to 68 s. b. 2d stage.	½ hr.	½ hour.	6.00 p.m. 32 sec. 6.30 28 7.00 41 7.30 63 8.00 68 9.00 63	5 min. 3 5 3½ 1 1	.....	.....
83.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 38 to 72 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 38 sec. 5.30 32 6.00 26 6.30 49 7.00 60 7.30 80	4 min. 4½ 2 1½ 1 1	.....	.....
84.	M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 2½ m., lasting 16 to 70 s. b. 2d stage.	½ hr.	½ hour.	2.30 a.m. 23 sec. 3.00 30 3.30 28 4.00 56 4.30 62 5.00 70	3 min. 2½ 3½ 1 2½ 3	.....	.....

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85.	M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 4 m., lasting 18 to 56 s. b. 2d stage.	½ hr.	½ hour.	1.30 a.m. 28 sec. 8 min. 2.00 16 11 2.30 46 6 3.00 60 3 3.30 66 1½ 4.00 38 2	.....	.....
86.	M. 14 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 1 m., 32 to 58 s. b. Beginning of 2d.	½ hr.	½ hour.	4.00 p.m. 36 sec. 11 min. 4.30 48 7 5.00 24 10 5.30 58 3 6.00 48 3	.....	.....
87.	M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 3 m., lasting 18 to 58 s. b. 2d stage.	½ hr.	½ hour.	7.00 p.m. 21 sec. 5 min. 7.30 38 2½ 8.00 60 6 8.30 44 4 9.00 56 2 9.30 62 3½	.....	.....
88.	M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 2½ m., lasting 20 to 46 s. b. 2d stage.	½ hr.	½ hour.	1.30 a.m. 22 sec. 8 min. 2.00 18 8 2.30 34 1½ 3.00 19 3 3.30 48 1½ 4.00 38 2	.....	.....
89.	M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 36 to 50 s. b. 2d stage.	½ hr.	½ hour.	11.00 a.m. 48 sec. 3 min. 11.30 56 4½ 12.00 60 3 12.30 38 2 1.00 46 2 1.30 58 2½	.....	.....
90.	M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 15 to 4½ m., lasting 30 to 62 s. b. 2d stage.	½ hr.	½ hour.	10.00 a.m. 50 sec. 15 min. 10.30 60 9 11.00 30 4 11.30 30 6 12.00 45 35 12.30 40 3	Inertia, forceps, prompt contraction after delivery	.....
91.	M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 2½ m., lasting 25 to 80 s. b. 2d stage.	½ hr.	½ hour.	9.30 a.m. 50 sec. 2 min. 10.00 23 6½ 10.30 25 5 11.00 30 10 11.30 100 2 12.00 130 2	Normal.	.....

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	Duration of Labor before Drug was given,	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
92.	M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 3 m., 18 to 56 s. b. Beginning of 2d.	½ hr.	½ hour.	11.00 a.m. 38 sec. 11.30 52 12.00 52 12.30 33 1.00 42—38	5½ min. 3 3 4 1½	Normal.	.....
93.	M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 46 to 80 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 25 sec. 5.30 26 6.00 46 6.30 42 7.00 52 7.30 38	4 min. 4 4 1½ 2 1	Normal.	.....
94.	M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 2 m., lasting 50 to 55 s. b. 2d stage.	½ hr.	½ hour.	11.00 a.m. 50 sec. 11.30 55 12.00 71 12.30 66 1.00 69 1.30 60	5 min. 3 3 5 3 3½	Normal.	.....
95.	M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 5 m., lasting 12 to 40 s. b. 2d stage.	½ hr.	½ hour.	2.00 p.m. 18 sec. 2.30 16 3.00 34 3.30 29 4.00 58	10 min. 10 7 5 2½	Normal.	.....
96.	M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 2 m., lasting 20 to 58 s. b. 2d stage.	½ hr.	½ hour.	4.00 p.m. 28 sec. 4.30 46 5.00 32 5.30 30 6.00 49 6.30 76	8 min. 7 2 5 1 1½	Normal.	.....
97.	M. 3 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2½ m., lasting 40 to 58 s. b. 2d stage.	½ hr.	½ hour.	9.00 p.m. 50 sec. 9.30 52 10.00 50 10.30 58 11.00 80 11.30 80	2 min. 3 2 2½ 1 ½	Normal.	.....

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98.	M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 1 m., lasting 24 to 55 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 38 sec. 8.30 46 9.00 32 9.30 55 10.00 61 10.30 60	5 min. 6 2 2½ 1 1½	Normal.	.....
99.	M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 2½ m., lasting 18 to 45 s. b. 2d stage.	½ hr.	½ hour.	10.00 a.m. 22 sec. 10.30 34 11.00 28 11.30 56 12.00 70	5 min. 2½ 3 4 2	Normal.	.....
100.	M. 3 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 2 m., lasting 40 to 60 s. b. 2d advanced.	½ hr.	½ hour.	1.30 a.m. 55 sec. 2.00 62 2.30 80 3.00 44 3.30 55 4.00 48	1 min. 1½ 3 2 ½ 1	Normal.	.....

No. of Case.	Primipara or Multipara. Duration of labor before drug was given.	Maximum and Minimum minutes between contractions.						Action of Uterus after delivery.	Maximum and Minimum seconds of duration of contractions.					
		Before (five observations) Administration.			After (six or seven observations) Administration.				Before (five observations) Administration.			After (five to seven observations) Administration.		
	Hours.	Max.	Min.	Av.	Max.	Min.	Av.	Result.	Max.	Min.	Av.	Max.	Min.	Av.
1.	M. 18	12	3	7½	9	2	5½	.....	90	40	65	120	60	90
2.	P. 9	10	2	6	10	1½	5¼	.....	28	28	28	102	48	75
3.	P. 12	10	½	5¼	15	2	8½	Contracted slowly, Free hæmorrhage.	20	20	20	80	40	60
4.	P. 8	8	2	5	5	1	3	.....	60	60	60	80	40	60
5.	P. 8	5	2	3½	3	1	2	.....	65	65	65	100	48	74
6.	P. 24	8	3	5½	7	1½	4¼	.....	60	30	45	60	30	45
7.	P. 9	7	5	6	5	2½	3¾	.....	38	23	30½	80	30	55
8.	P. 14	9	5	7	6	1½	3¾	.....	38	24	31	90	38	64

P.—Primipara. M.—Multipara.

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No. of Case.	Primipara or Multipara.	Duration of labor before drug was given.	Maximum and Minimum minutes between contractions. Before (five observations) Administration.			After (six or seven observations) Administration.			Action of Uterus after delivery.	Maximum and Minimum seconds of duration of contractions. Before (five observations) Administration.			After (five to seven observations) Administration.		
		Hours.	Max.	Min.	Av.	Max.	Min.	Av.	Result.	Max.	Min.	Av.	Max.	Min.	Av.
9.	P.	12	2½	1½	2	1½	½	1	.....	90	40	65	98	68	83
10.	P.	10	10	4	7	10	1½	5¾	.....	60	30	45	88	26	57
11.	P.	8	7	4	5½	3	1	2	.....	68	30	49	80	38	59
12.	P.	8	5	1½	3¼	5	2	3½	.....	38	20	29	90	28	59
13.	P.	10	4	3	3½	3	1½	2¼	.....	60	40	50	90	40	65
14.	P.	10	5	4	4½	3	2	2½	Feeble contraction, free bleeding.	38	4	21	50	36	43
15.	P.	12	12	8	10	8½	2	5¼	.....	40	28	34	80	20	50
16.	P.	16	8	5	6½	8	2	5	.....	45	38	41½	90	38	64
17.	P.	11	5	3	4	3	1	2	.....	60	45	52½	90	36	63
18.	P.	20	7	4	5½	4	1½	2¾	.....	60	30	45	65	22	43½
19.	P.	10	5	3	4	3½	½	2	.....	60	38	49	80	40	60
20.	P.	12	11	5	8	10	3	6½	.....	50	30	40	72	30	51
21.	P.	14	6	4	5	4½	2	3¼	.....	46	30	38	68	38	53
22.	P.	20	3	1½	2¼	2	½	1¼	.....	68	50	59	80	60	70
23.	P.	10	5	3	4	4	2	3	.....	50	38	44	80	37	58½
24.	P.	10	7	4	5½	7	1	4	.....	60	45	52½	80	38	59
25.	P.	8	10	1	5½	8	1	4½	.....	60	18	39	60	26	43
26.	P.	8	7	5	6	6	1	3½	.....	38	22	30	56	40	48
27.	P.	14	2½	2	2¼	3	1½	2¼	.....	38	24	31	72	30	51
28.	P.	20	5	3	4	6	1½	3¾	.....	48	22	35	78	22	50
29.	P.	12½	12	7	9½	10	1	5½	.....	30	12	21	90	18	54
30.	P.	24	6	3½	4¾	4	1	2½	.....	63	40	51½	72	42	57
31.	P.	11	12	6	9	11	1½	6¼	.....	30	18	24	60	22	41
32.	P.	12	7	4	5½	4½	1	2¾	.....	40	29	34½	68	38	53

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33.	P.	13	10	6	8	10	1	5½	.....	30	12	21	60	16	38
34.	P.	8	7	3	5	5	1	3	.....	28	16	22	90	28	59
35.	P.	15	11	5	8	7	1	4	.....	38	18	28	68	20	44
36.	P.	6	12	8	10	10	2	6	.....	36	12	24	90	12	51
37.	P.	8	15	8	11½	10	2	6	.....	48	10	29	68	15	41½
38.	P.	12	7	4	5½	3	½	1¾	.....	48	20	34	80	38	59
39.	P.	9	6	2½	4¼	6	1	3½	.....	50	18	34	100	18	59
40.	M.	12	3½	3	3¼	3	½	1¾	.....	40	38	39	68	40	54
41.	M.	12	5	2	3½	4	1	2½	.....	48	18	33	62	38	50
42.	M.	12	4½	3	3¾	3	½	1¾	.....	55	18	36½	90	22	56
43.	M.	5	10	6	8	11	1	6	.....	38	12	25	90	18	54
44.	M.	7	6	4	5	4	1	2½	.....	58	22	40	86	26	56
45.	M.	10	5	3½	4¼	5	1	3	.....	36	20	28	68	27	47½
46.	M.	22	3	2½	2¾	2	½	1¼	.....	60	38	49	112	49	80½
47.	M.	12	5	3	4	3½	¾	2⅛	.....	58	24	41	80	33	56½
48.	M.	12	7	4	5½	5	1½	3¼	.....	48	12	30	84	18	51
49.	M.	10	11	3½	7¼	11	2	6½	.....	36	18	27	88	21	54½
50.	M.	10	7	4	5½	5	1	3	.....	66	24	45	78	38	58
51.	M.	14	8	5	6½	7½	1	4¼	.....	58	20	39	60	18	39
52.	M.	9	5½	2	3¾	3½	1	2¼	.....	43	22	32½	60	26	43
53.	M.	20	5	2	3½	5	1	3	.....	50	36	43	70	36	53
54.	M.	24	12	5	8½	10	1	5½	Feeble contraction....	48	10	29	90	12	51
55.	M.	18	3	2½	2¾	3	1	2	.....	50	28	39	96	36	66
56.	M.	9	6	3	4½	5½	1	3¼	.....	40	18	29	102	17	59½
57.	M.	12	10	5	7½	8	3	5½	.....	28	12	20	64	10	37
58.	M.	8	8	3	5½	9	1½	5¼	.....	40	22	31	72	28	50
59.	M.	16	3½	3	3¼	3	½	1¾	.....	48	12	30	96	17	56½
60.	M.	16	4	3½	3¾	3½	1	2¼	Uterus contracted feebly; slight excess of bleeding.	42	28	35	67	38	52½
61.	M.	21	10	4	7	12	1½	6¾	.....	60	48	54	80	58	69
62.	M.	14	8	5	6½	8	2	5	.....	80	18	49	86	17	51½
63.	M.	12	4	3½	3¾	3¼	½	1⅞	.....	58	30	44	79	36	57½
64.	M.	5	5	3	4	4	1½	2¾	.....	48	36	42	67	41	54
65.	M.	7	10	5	7½	9	2	5½	.....	40	26	33	76	23	49½
66.	M.	10	6	5	5½	6	1½	3¾	.....	60	22	41	68	16	42

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67.	M.	11	10	3	6½	8	2	5	.....	58	28	43	90	32	61
68.	M.	4	12	3	7½	10	1½	5¾	.....	58	16	37	60	18	39
69.	M.	3	4	2	3	4	1	2½	.....	64	30	47	92	26	59
70.	M.	8	10	2	6	8	1	4½	.....	56	20	38	63	22	42½
71.	M.	8	5	3½	4¼	4	2	3	.....	52	12	32	78	16	47
72.	M.	7	8	2	5	6	1	3½	.....	52	30	41	80	32	56
73.	M.	6	14	2½	8¼	11	1	6	.....	60	16	38	76	12	44
74.	M.	9	5	3	4	5	1½	3¼	.....	58	21	39½	60	24	42
75.	M.	12	4	3½	3¾	3	1½	2¼	.....	40	32	36	56	32	44
76.	M.	6	6	2½	4¼	5	1½	3¼	.....	34	28	31	94	26	60
77.	M.	8½	7	3	5	6	2	4	.....	70	35	52½	99	33	66
78.	M.	8	10	2½	6¼	9	1	5	.....	63	18	40½	92	15	53½
79.	M.	10	5	2	3½	5	1	3	.....	56	43	49½	84	38	61
80.	M.	5	7	4	5½	5	1½	3¼	.....	70	38	54	88	44	66
81.	M.	7	7	3½	5¼	7	1	4	.....	58	12	35	60	17	38½
82.	M.	9	5	2	3½	5	1	3	.....	68	22	45	68	28	48
83.	M.	8	5	2	3½	4½	1	2¾	.....	72	38	55	80	26	53
84.	M.	9	4	2½	3¼	3½	1	2¼	.....	70	16	43	70	23	46½
85.	M.	12	10	4	7	11	2	6½	.....	56	18	37	66	16	41
86.	M.	14	8	1	4½	10	3	6½	.....	58	32	45	58	24	41
87.	M.	10	10	3	6½	6	2	4	.....	58	18	38	60	24	42
88.	M.	6	8	2½	5¼	8	1½	4¾	.....	46	20	33	48	18	33
89.	M.	6	5	2	3½	4½	2	3¼	.....	50	36	43	58	46	52
90.	M.	8	15	4½	9¾	15	1	8	Inertia, forceps necessary to terminate labor.	62	30	46	60	30	45
91.	M.	9	7	2½	4¾	10	2	6	.....	80	25	52½	130	25	77½
92.	M.	8	7	3	5	5½	1½	3½	.....	56	18	37	52	33	42½
93.	M.	12	5	2	3½	4	1	2½	.....	80	46	63	72	21	46½
94.	M.	5	3	2	2½	5	3	4	.....	55	50	52½	71	50	60½
95.	M.	7	10	5	7½	10	2½	6¼	.....	40	12	26	58	16	37
96.	M.	7	8	2	5	8	1	4½	.....	58	20	38	76	28	52
97.	M.	3	5	2½	3¾	3	1	2	.....	58	40	39	80	50	65
98.	M.	8	6	1	3½	6	1	3½	.....	55	24	39½	60	32	46
99.	M.	8	6	2½	4¼	5	2	3½	.....	45	18	31½	70	22	46
100.	M.	3	4	2	3	3	1	2	.....	60	40	50	80	47	63½

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, February 3, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

Pregnancy and Labor complicated by Anterior Fixation of the Uterus.

BY GEORGE M. BOYD, M.D.

(See page 76.)

DISCUSSION.

Dr. E. E. MONTGOMERY: Unfortunately, I did not enter the room in time to hear the presentation of the case; only the latter part of the paper was heard. I have had opportunity to do quite a number of operations of this character. I have not had reports of adverse results in subsequent pregnancies. I know of three pregnancies having occurred subsequent to the performance of the operation, without the patient experiencing any difficulty in the labor. I have been called in consultation on but one patient on which an operation had been done. In this case the fixation was purposely a strong one, as the operator informed me subsequently, owing to the fact that the woman was suffering from procidentia. In her case the labor had been very much complicated, the os was situated high up, the fœtus presented in the transverse position; whether the fixation was responsible for this, of course I could not positively say. An arm had presented and been cut off. When I saw her the fœtus was pretty well doubled up in the pelvis, so that I had no hesitancy in taking such measures as would deliver the fœtus most readily and with least difficulty to the mother. I applied a cranioclast to the spine of the child and broke it in two, delivered the lower extremities and subsequently the trunk and head. The woman recovered without any subsequent difficulty. I have seen two patients who had experienced some discomfort and distress in subsequent labors. In one patient, which Dr. Krusen will recall, the patient was suffering from more or less abdominal discomfort, but in that case we could not say how much was due to the fixation or to having been knocked down and run over by a bicycle a few days before. It was

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thought that she would abort or miscarry, but we were able to get her to the hospital, where the symptoms apparently subsided. This is all the experience of this character that I have had in which I have had an opportunity of seeing the complications of labor after ventrofixation.

Dr. STUBBS: I have performed this operation a few times and had experience of subsequent labor in two cases. I operated on one patient; she became pregnant and aborted three months after. I did not attend her, but my brother, who did, attributed it to fixation. I have operated on another case; she is now pregnant, and I do not anticipate any trouble.

Dr. W. E. PARKE: The two experiences that I recall most distinctly proved very disastrous ones. I was in attendance on the first case from the beginning, and after the woman was in labor for thirty-six hours and little or no progress was made, a consultation was held and it was decided that she should have an operation. She was removed to the hospital, where Cæsarean section—the Porro operation—was performed by Dr. Noble. She unfortunately had been infected before she was removed to the hospital, and died subsequently of infection. The second case of this character was not seen by me until she had been in labor seventy-two hours. She had been attended in the first place by a midwife, then by a physician who abandoned the case, and later by a second physician, with whom I saw her. The doctor in attendance had made various endeavors to remove the fœtus, but had not succeeded. After giving her ether we succeeded with great difficulty in delivering a dead fœtus. This patient was also infected and died a few days later. Both these patients had the difficulties usually arising in cases of this kind—that is, the anterior wall of the uterus was very much thickened, and so offered an obstruction to the labor.

Dr. KRUSEN: In the case Dr. Montgomery referred to the labor was terminated normally. The patient was delivered about a year ago, became pregnant since and miscarried at two months. In one or two cases coming under my observation the women have been very uncomfortable during the first three or four months of gestation; later pregnancy seems to be more comfortable. I would like to hear from the members their views as to the discomfort occasioned their patients during early months of pregnancy.

Dr. L. J. HAMMOND: I would like to ask in regard to the cases Dr. Parke has spoken of, whether an autopsy was made, and if so, whether there was any particular change in the uterine muscle. Dr. Boyd refers to cases as likely to have some difficulty in dilatation of

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the cervix. I think our experience is that when filled with the product of conception the cervix uteri dilates in spite of obstruction, and therefore I believe some muscular change must have taken place to bring about a condition necessitating mechanical dilatation.

Dr. PARKE: In neither of these cases was an autopsy made.

Dr. W. S. STEWART: I would like to ask Dr. Boyd if in the dilating of the cervix he used applications of any kind, such as we used in times past—such as extract of belladonna, which is applied to the cervix so as to relax and cause dilatation more readily to be accomplished.

Dr. NOBLE: My own experience of labor complicated by ventrofixation has embraced several cases. I saw one of those referred to by Dr. Parke, and it was impossible to dilate the cervix sufficiently to get your hand and arm up above a shelf, which was formed by the imprisoned anterior wall of the uterus. That constituted a tumor, and above it was a shelf on which the fœtus rested. While you could feel the body or legs, it was impossible to get the hand above it to grasp the fœtal parts. Dr. Parish saw that case also. The only way would have been by splitting the anterior wall sufficiently high up to overcome the obstruction. That is the only alternative to Cæsarean section. In another case I thought I would be compelled to do a section, but with patience and persistence I was able to pass the obstruction and get the feet of the child and deliver, the result being a dead baby. Where the uterus is firmly fixed and cervix pulled up into the abdomen, the natural way for labor to take place would be through the lumbar region.

The last case I attended I induced premature labor, but the woman had absolutely no pains, the uterus did not contract at all; the cervix did not dilate. It was necessary to dilate it with the Barnes' bags and with the hand, and in consequence of a tedious delivery the baby was lost. I feel I have nothing further to recommend in the conduct of these labors except that my own judgment is it is wise to induce labor if we find six weeks before term that the cervix is drawn up into the abdominal cavity, because otherwise I feel that quite a number will have to be delivered by Cæsarean section.

Dr. G. M. BOYD: In reply to Dr. Stewart, I would say that we use no local application to the cervix for the purpose of bringing about dilatation. This new, or somewhat new, cause of dystocia, looking at it from an obstetrical standpoint, will increase the number of our operative cases, and the means of detecting labor so complicated seems to me of a great deal of importance. It seems to me that the wisest course is to allow the patient to go to term, and if the obstruction is not ex-

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ceedingly great to perform a cervical incision, a free incision. This has been suggested by Dührsen. Other reports of this operation have been very successful, and the hæmorrhage from the extensive incision surprisingly small. If the obstruction is exceedingly great, and where we are only with great difficulty able to reach the presenting part, then I believe the Cæsarean section is the best operation.

A Study of the Action of Quinine in One Hundred Cases of Labor.

By L. J. Hammond, M.D.

(See page 86.)

Discussion.

Dr. G. M. Boyd: I enjoyed Dr. Hammond's paper very much. This subject was discussed during Dr. Montgomery's presidency by a paper that Dr. Hare presented and, if I remember rightly, from a number of letters that he sent out to various physicians, the concensus of opinion was in the negative as to the value of the use of quinine during labor. Some of the text-books speak of it as an old-time treatment that now is considered of no value. Other text-books mention it with favor. Dr. Albert H. Smith and Dr. Fordyce Barker, in 1871, read papers upon the value of quinine in pregnancy, and from that time it has been, I believe, very generally used in Philadelphia and New York, with very favorable reports. In the institution that I am connected with the late Dr. Albert H. Smith used this treatment successfully, and it may possibly be because of my association with the institution and following up some of its old customs that my belief in quinine has been developed. I believe that it does increase the strength of the labor pains and the frequency, and I believe that it increases the frequency and the strength of the labor pains, acting as a general tonic, knowing as we do that it is probably the best of our drugs for that purpose. I feel quite sure that I have seen positive effect from its administration, and I believe that the effect that it produces is one, acting as it does as a general tonic.

Dr. W. S. Stewart: I would like to ask one question of the reader of the paper. I think he deserves a great deal of credit for the painstaking and thorough work he has done. I would like to know in cases of cinchonism what the results have been after administering quinine; that is, if the patients' heads are easily affected? It is seldom we can get a female to take as much as thirty grains (within the period he refers) who is not seriously affected by it. It has been my experi-

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ence that much less than thirty grains would be more than sufficient to affect the head, and the consequence is generally very annoying and distressing symptoms.

Dr. L. J. HAMMOND: In regard to Dr. Boyd's statement, I would like to say that I started into this investigation as a sceptic. I had very little, if any, faith in regard to quinine in stimulating uterine contraction. In fact, I had no faith in it until I began to make up my report, and I could not go back on figures. It seems to me to be of value in that class of cases in which I have made these observations. In cases in which there seems to be a general atonic condition, in these cases I think it does the abdominal muscles as much good as the uterine; indeed, the entire muscular system shows in the benefits.

As to cinchonism: the uterus has contracted normally and the getting up has been normal, so that I have not had any untoward experience reported to me by the patient.

Removal of Urethral Caruncle; Curettement; Amputation of Posterior Lip; Hysteropexy; Nephropexy of Right and Removal of Cyst of Left Kidney.

Dr. E. E. MONTGOMERY: One patient, at one sitting, of Newtown, Pa., who underwent operation in my sanatorium, October 14, 1897, gave a history of being 47 years of age, and had two children, but had never been well since the birth of the last child, nineteen years ago. Menstruation was regular, the last period rather prolonged. She had noticed for a number of years a tumor situated a little above the umbilicus, which was very movable. The patient was extremely thin and presented a dark grayish color of the skin She complained of obstinate constipation, attended with marked pain in the evacuation of the bowels. Upon examination it was found that the tumor, which was freely movable in the abdomen, could be pushed up to the left side under the ribs and was recognized to be the left kidney. It was considerably larger than normal. On examination the right kidney was found to be quite movable, extending downward below the crest of the ilium. The uterus was retroflexed, more or less fixed. The patient in addition to the difficulty in evacuation of the bowels, suffered from frequent attacks of nausea and vomiting. The lower end of the cervix was abraded, thickened, and the posterior lip very much enlarged. A caruncle projected from the orifice of the urethra.

The patient underwent operation, the uterus was first dilated, curetted, packed with gauze, the posterior lip of the cervix amputated,

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the caruncle removed from the urethra; the abdomen opened, adhesions broken up, the uterus brought forward and fastened to the anterior abdominal wall by through and through sutures, using for this purpose the figure-of-eight stitch, which crossed external to the aponeurosis of the muscle. The fundus of the uterus was previously sacrificed. This was done with a view of making a firm adhesion between the fundus of the uterus and the anterior abdominal wall. No objections could be presented against this union, for the reason that she had reached an age when it was improbable that she was ever likely to again become pregnant. The right lumbar region was opened by a vertical incision, alongside the lumbo-sacral muscle, the capsule denuded on the surface of the right kidney, and this fastened by three sutures; the wound closed, using silkworm-gut sutures for drainage. The left lumbar region was opened in a similar manner, the left kidney, which was floating, pushed up into the wound, and at its inferior end a sac was found, containing fluid. This sac was considerably larger than a hen's egg, its wall was lined with calcareous material. On examination the ureter was found adherent to its side. This was carefully separated and then the sac excised, opening pretty well up against, but not into the pelvis of the kidney. The raw kidney surface was sutured with fine silk, the wound below packed with iodoform gauze, leaving the major portion of the wound open; gauze was packed all around the kidney.

The patient stood the operation well. In separating this sac it ruptured and its contents flowed over the surface, coming in contact with both the other wounds. These were carefully cleansed, but notwithstanding the cleansing, infection occurred and a stitch abscess resulted in the abdominal wound, and another in the wound for the right kidney. After finding the condition of the second kidney, that is, the left kidney, so changed, I regretted very much that I had disturbed the right, as the injury of both kidneys rendered it possible that the subsequent renal irritation might be so serious as to interfere with processes of elimination. For a few days the urine was quite high colored and contained considerable ablumin. Under the use, however, of water in good quantity, and attention to the condition of the bowels, the patient experienced no special inconvenience. She was able to return home at the end of four weeks from the time the operation was done, with the abdominal wound completely healed, the wound of the left kidney almost closed, and with the right closed, with the exception of a sinus from which a drop or two of pus discharged. The infection in the right wound resulted without question in infection of the deep

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sutures, so they subsequently had to be removed. The patient gained rapidly in health and in her general appearance. She was seen in the latter part of January, when she had evidently gained some 15 or 20 pounds, looked in excellent condition, fresh, bright; complained, however, still of considerable constipation and the discharge at times of considerable glairy mucus from the anus. Upon examination it was found the urine contained a small amount of albumin, and on microscopical examination there was squamous epithelium from the vulva and bladder. Some free red and white blood corpuscles. Numerous casts containing epithelium, leucocytes and red blood corpuscles.

After the operation, which was done at 12:30 on the 14th, she voided three ounces of urine at eleven P. M. Was intensely nauseated. Nausea continued. On the 15th 13 ounces, on the 16th 18 ounces, on the 17th 26 ounces. Still nauseated, able to retain but very little nourishment. On the 18th 18 ounces, on the 19th 19 ounces; nausea ceased. On the 20th 16 ounces, on the 21st 18 ounces. At this time the quantity of urine increased. Maximum temperature 101.6° on the 22d. Returned to her home on the 8th day of November, twenty-four days after the operation.

A proper criticism upon this case in view of the condition found, would be that the operation upon the right kidney should have been omitted. The left kidney was so markedly displaced that it was reasonable to suppose that any radical changes would be more likely to be found in it than in the right, and it would have been better, consequently, to have operated upon it alone. I question, indeed, whether it is wise in any case to interfere with both kidneys at the same operation.

It is rare, in my experience, after any operation for fixation of the kidney, that there is not some indication of renal irritation, with the presence of albumin, possibly blood corpuscles in the urine. This irritation affecting both kidneys might very readily lead, especially in a patient in whom there was some pre-existing kidney irritation, to failure to carry on the functions of the organs, and the consequent death of the patient. It is quite tempting in a patient who has been suffering for a length of time, whose circumstances are such that she cannot afford a repetition of operations, to do all that is necessary at the one sitting. This was what led me to perform the operation upon both kidneys, although I am free to say that had I operated upon the left first, I should not have disturbed the right. The left kidney operation is one a little out of the usual order, in that the kidney structure was invaded, involving the removal of at least one-third of the kidney

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and union of the remaining surfaces by suture. The result has certainly demonstrated that such surgery is justifiable and it is better the patient should have the remaining portion of the kidney, than it would have been to have removed the one kidney, throwing all the work upon the other organ.

We cannot claim the patient as cured, inasmuch as there is albumin in the urine and the presence of casts and blood corpuscles, but the gain of flesh, strength and general appearance affords a hope that this is also temporary.

DISCUSSION.

Dr. L. J. HAMMOND: I would like to ask Dr. Montgomery if he undertook before the operation to learn by examining the urine from the ureters separately whether there was disease in one more than in the other kidney, and also whether it would be possible at this stage to learn by an examination of the ureters which of the two was more diseased, as he says there is still some disease. As evidenced by the presence of albumin, it would, I think, be instructive to know whether the kidney that was found at the operation to be most at fault, was at the present time the origin of the albumin now present.

Dr. E. E. MONTGOMERY: The urine was examined carefully prior to the performance of the operation, and there was at that time no indication of disease of either kidney, so far as urine examined; so there was no special indication to examine urine drawn from ureter. Of course it would be perfectly possible to draw urine from each ureter to determine which kidney was at fault in production of the albumin and whether one was more involved than the other.

The Puerperium complicated by Typhoid Fever.

BY WILLIAM E. PARKE, M.D.

(See page 79.)

DISCUSSION.

Dr. E. E. MONTGOMERY: This is an exceedingly important report and demonstrates still further the difficulties which environ the physician in the study and treatment of his cases. It is exceedingly important to determine the presence of infection, to determine the source of infection, or whether it is some intercurrent affection as described

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in this case. The occurrence of elevation of temperature, however, was late in the course of the convalescence and the fact that the lochial discharge was not offensive, that the digital examination of the uterine cavity disclosed the absence of any decomposing material, would seem to me to contra-indicate the advisability of any operation so severe as curettage, for the reason that at the period named, if it is due to septic infection, the germs after penetrating through the uterine mucous membrane have entered the blood, so that it is impossible by any local manipulation to remove the source of poison. Such a case would illustrate the importance of examination of discharges, with a view of determining either by the microscopical examination or by cultures the existence of infection or by Widal's test, to arrive at a determination as to the presence of typhoid fever. Of course if we can demonstrate that typhoid fever exists it will save much time and aid materially in treatment.

Dr. Boyd: Typhoid fever is considered a serious complication to pregnancy and labor and I believe it is a fortunate thing in Dr. Parke's case that the typhoid developed late. If it develops early the labor is premature and the woman usually dies. I remember one case which gave me a great deal of thought; the patient had some fever when she fell in labor and immediately with her delivery a high temperature and a course very similar to that of rapid septic infection ensued. There was no tenderness over the uterus nor was the lochia infected, but the other symptoms were those resembling very much infection. She developed later the spots of typhoid fever, and, in my belief that the case was not septic, I made some inquiry in regard to her history, and found that where she was living, before she entered the hospital, the house was in very bad condition, and at that time I found her husband had typhoid fever. I remember also Dr. Parish saw the case with me and confirmed the diagnosis. The patient went from bad to worse and died in ten days or two weeks after delivery.

Dr. J. M. Fisher: "An honest confession is good for the soul." After listening to this paper of Dr. Parke's, I wish to confess to having seen a patient about a week ago in whom I made a diagnosis of puerperal infection that I now believe to be a case of typhoid. Fever set in on the 7th or 8th day, preceded by a chill. Upon making an explorations of the interior of the uterus there was no offensive discharge of any evidence of retained material, and I did not consider it necessary to do a curettement. I washed out the uterus and told the doctor that he had a case of streptococcus blood infection, and that the patient, if recovery was possible, would no doubt be sick for a number of weeks.

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Upon reflection after hearing this paper, I honestly think that she is suffering from typhoid fever. I shall see the patient tomorrow and look for spots, etc.

Dr. PARKE: I think the points Dr. Montgomery brings out are well taken, and they are really the ones that led me to question the diagnosis in the case. I, too, felt that she was not septic, but gave her the benefit of treatment for sepsis in the absence of a positive diagnosis. I have looked hastily over the Index Medicus for four years, and in all that time found only one case recorded.

Conservative Surgical Treatment of Uterine Fibroids.

BY WILMER KRUSEN, M.D.

(See page 82.)

DISCUSSION.

Dr. MONTGOMERY: I think the Society is very greatly indebted to Dr. Krusen for the excellent presentation of so important a subject. I have been very much impressed with the slight amount of hæmorrhage in the removal of these growths. The removal of fibroids is usually considered one of the serious operations, particularly where we proceed to removal of the uterus. Hæmorrhage is a matter which we regard with considerable anxiety, the vessels which enter the uterus are large, principally the result of increased nutrition conveyed to these great growths and for this reason I had expected that the hæmorrhage would be a marked symptom, but on the contrary the vessels are easily controlled by means of a hæmostat, so that it is not a factor of so serious importance as it would seem. There is one exception I will take to the technique which the doctor has given, and that is the necessity for the previous currettement of the uterus. I do not believe this is a wise precaution to take. The researches of Krönig and Menge have demonstrated the fact that the uterine cavity does not in ordinary conditions, and very rarely indeed, contain infectious germs; that the uterine cavity has the power of ridding itself of these germs even when they are carried into the uterus, and injuries have taken place. The introduction of the curette and scraping the surface affords an opportunity for entrance of germs and renders the soil exceedingly favorable for it. If the cavity of the uterus is not packed with gauze to prevent accumulation of blood within it the latter affords a

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favorable culture material for germs. If you introduce gauze into the cavity of the uterus you will find in feeling over the organ that you will be in doubt whether the mass is not a fibroid growth. Operating upon a woman recently who had had hæmorrhage I packed with gauze, opened the womb and removed three fibroid growths within the wall. After completing my work I felt a tumor. I split open the uterus and much to my disgust found the mass I felt was merely the gauze. I examined carefully and found there was no fibroid in the wall. I sutured the uterus with catgut and fortunately have had no unpleasant result from it. The patient has recovered without temperature exceeding 100.2°, yet I did an operation unnecessary as a result of having packed this uterus with gauze, so that I consider this part of the operation is apt to be misleading.

Dr. J. M. FISHER: There is one point of interest in connection with this subject to which reference has not been made in the paper, and that is the influence that the removal of a certain number of these tumors has upon any remaining growths in the uterine wall. In my own case referred to, there were quite a number of small nodules left in the uterine wall that could not be removed. If an attempt had been made to enucleate them all it would have been necessary to sacrifice almost the entire uterus, and it was my desire to leave as much of the organ as possible. A recent examination disclosed that the uterus was about normal in size and did not present any nodules. I therefore came to the conclusion that all the remaining fibroids present at the time of the operation had atrophied or disappeared altogether. It is a matter of medical history that quite large fibroids have disappeared altogether following mere exploratory operations without removing any of the pelvic structures. Possibly this is due to some reflex nervous change. I think it is well to remember in connection with these cases that so-called fibroids of the uterus are not fibroid tumors at all, but that they consist of commingling aggregations of encapsulated fibrous and muscular structure; the capsule being incised, the tumor is readily enucleated and the hæmorrhage easily controlled. I must take exception to what Dr. Montgomery has said in regard to the absence of infectious germs in the uterine cavity. In case of fibroid disease of the uterus we know that in a large proportion of these cases there is a diseased condition not only of the walls of the uterus, but likewise of the ovaries and tubes, as well as of the lining membrane forming the cavity of the uterus. The irritation these tumors give rise to is apt to produce a favorable soil for the growth of micro-organisms and pathogenic germs are found in the cervix almost constantly in an at-

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tenuated form, which may become active under favorable conditions. I think the proper thing to do is to attend to the cavity of the uterus first, especially where you have reason to suppose that this may be invaded during the operation through the abdomen.

Dr. F. C. HAMMOND: From an obstetrical standpoint this operation has been opposed. Where several fibroids have been removed from the same incision, which necessitates tunnelling of the uterine wall, these operators claim, and it must be from theoretical grounds, that, these cases having become pregnant, untoward symptoms should be looked for during gestation or labor. In addition to the tables tabulated by Krusen in his paper, it would be well to review those of Sutton and Giles in London. These men, having done myomectomy and removed as high as thirty and forty fibroids from one case, and removing as many as fifteen to sixteen growths through the same incision, thus necessarily tunnelling the uterine wall, and if anything would make it weak this would, have watched these cases through gestation and found no untoward symptoms and have attended these women through labor, which has terminated satisfactorily, as they report. I think this is an important point. Of course we should look toward the future as well as the present results of an operation, and the men who are opposing myomectomy in view of the future are doing so from the theoretical instead of the practical side of the question.

Dr. L. J. HAMMOND: I would like to mention a case I operated on some six or eight months ago, partly from the fact that I erred in my diagnosis, also because of the fact that it contained so many extramural fibroid nodules. When I made the incision I expected to find some disease in the right tube and ovary, but instead I found a pedunculated fibroid, which rose from the fundus of the uterus and dropped down to the rgiht side practically in the position of the tube. There were three of the growths removed, the woman made an uninterrupted recovery and has had no bad symptoms since. The indications for the operation were the intense pain she suffered, I presume from the pressure of this growth on the tube.

Dr. C. P. NOBLE: The question of myomectomy is one in which I have been interested for some years. The first operations done for fibroids were myomectomies and done as far back as in the forties. All of Atlee's early operations were myomectomies and as we all know he was working at this subject as early as forty-three. The first abdominal myomectomy was done in 1853; you will find it reported in Atlee's Prize Essay on Operations for Fibroid Tumors. In that case the tumor was sessile and subserous, and not an intramural. Most of the

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myomectomies done by Atlee were done through the vagina, but I think it is of interest historically that myomectomies were done for many years in this country, in fact, it was the original operation. Most of the operations done by Emmet for years were myomectomies and done largely through the vagina. I make mention of this historical matter because Dr. Krusen very properly ascribed the modern operation of myomectomy to Martin, but it was only right to go back to Atlee, who preceded Martin and was the pioneer. The age of the patient must be taken into consideration in every case. Of course there is nothing to be gained in a woman who has about reached the menopause, in doing myomectomy, providing in that case hysterectomy would be a simpler operation. We must weigh the respective advantages of myomectomy or hysterectomy, taking into consideration the nature of the case. It so happens that this winter only one case has come to me in any way suitable for myomectomy, and she was a woman 36 years of age. The tumor, however, proved to be intraligamentous in its development. In order to remove it, it was necessary to do a very difficult hysterectomy. About one-fifth of the operations I have performed have been myomectomies, quite a number have been done from the vagina and the remainder from the abdomen. I have not so far removed the large number of tumors that we read about, that is ten or fifteen tumors from one uterus. Unless the patient were herself extremely desirous to retain her uterus, and there were very good reasons from the standpoint of child-bearing, it seems prudent to limit the operation to those having a lesser number. If a patient has fifteen or twenty fibroids I feel myself it is wiser to take out the uterus. Patients having intramural submucous fibroids I find it quite feasible to split the uterus, to get them out from below. I do not remember the number of fibroids I have removed in this way, but it is quite considerable, and all made good recoveries. There was little hæmorrhage, so little that it was suprising to me. I split the uterus entirely up to or beyond the internal os, pulled one lip forward, the other backward; then catching hold of the tumor with bullet forceps you could work it loose and get it out. Some of the tumors have been so large that I have had to split them to get them down. Quite a number of the women have had children since.

As to curretting, I must say in all these cases I have operated on I have preceded the abdominal myomectomy by curretting. The theoretical points to the contrary, notwithstanding, it seems to me wiser to use the curette and depend upon careful disinfection of the vagina to prevent subsequent infection of the endometrium.

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Dr. E. E. MONTGOMERY: As the President's remarks upon the large number of fibroids seem rather to reflect upon the case reported, I would say the women was 40 years old and had 13 fibroids; she was unmarried and exceedingly anxious to retain her uterus, and as the growths were not very large, it was deemed wiser to remove them and not sacrifice the uterus. I have never had a patient who has gone through a more satisfactory convalescence subsequent to operation, and this was the case in which five of the fibroids were removed from the abdominal cavity.

Dr. WILMER KRUSEN: In defence of the method of currettement there are two reasons I would advance; first, for the purposes of procuring perfect asepsis; the other reason is that, so often after enucleation we return to the pelvic cavity a very large uterus. We have frequently associated endometritis and a fungoid uterus; by removing this we place the uterus in the most favorable condition.

Another criticism on my own paper I would make is that of Dr. Fisher's case, in which he left several nodules in the uterus. I had a case in which Battey's operation was done. It increased preceptibly in size and necessitated hysterectomy afterwards. If you leave the ovary and tubes in, as you always should, there is a possibility of tumor developing later. I have had no experience with pregnancy following.

In regard to the history of myomectomy: I referred purely to abdominal myomectomy, which was suggested, if not originated, by Martin, of Berlin, where premature menopause would be attended by very marked alterations. The average age was 31. None of them have borne twins, I believe.

Official Transactions.

FRANK W. TALLEY, Secretary.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, March 3, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

A Minute upon the Death of Theophilus Parvin, M.D.

BY WILLIAM H. PARISH, M.D., was read by the Secretary.

Dr. Parvin was one of the most esteemed members of the Philadelphia Obstetrical Society. Soon after he came to Philadelphia in 1883, he was elected to membership, and he added repeatedly to the interest of its meetings by the papers he read and by the part he took in discussions. With honor to us he also served a term as our President.

The most of our members were personally acquainted with him—a few intimately. His commanding figure, commanding even when bowed with the weight of more than three score and ten years, was a familiar object. We listened to his papers and his discussions always with unflagging interest and often with considerable profit. We enjoyed his finished English, his lucid arguments, and the usual correctness and the unvariable honesty of his views. We recognized and often wished we possessed his cultured and well-trained intellect, his powerful and richly stored mind. We knew of his devotion to our profession, of the earnestness and success with which he studied and practised in those departments of medicine in which we are most interested. Side by side we felt that he and we were working in a noble and a common cause.

We know that he was receiving the honors of an appreciative profession; we saw him at different times one of the faculty of some of our most eminent colleges. We saw titles of honor conferred upon him by institutions of learning, and we heard the echoes of his fame as they came to us from remote portions of the medical world. We saw his writings recognized as authoritative in the medical profession. We saw and heard these things and we rejoiced that they were so.

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His literary researches were not limited, however, to the writings of medical men, but he loved and lingered with the poet, the historian, and the cultured literary writer generally.

When we turned our eyes upon his private life, we saw his family love, his generous friendship, his Christian characteristics. We saw him living a life simple, strong, and pure.

Certainly, he had his imperfections, professional and personal, but they were insignificant.

The name of Dr. Theophilus Parvin will remain through generations, the pride and the honor of this Society, the pride and the honor of the medical profession of America.

A Case of Ruptured Extra-uterine Pregnancy complicated by Dermoid Tumor; Operation and Recovery.

Dr. THEODORE A. ERCK: D. J., 22 years of age, single. Puberty occurred at 13 years, her menses were always regular in time, lasting three to four days, never profuse nor painful. She had missed her period in November, and on December 26, 1897, had purchased some medicine at a pharmacy for the purpose of bringing on her period. On January 5th, she had an attack of agonizing pain in the pelvis accompanied by a moderate uterine hemorrhage. Her flow continued intermittently until January 24th; she kept on with her usual duties as a servant, however, and claims to have been unable to sleep on account of the almost nightly recurrence of pain, which caused her a great deal of nausea. She never vomited nor was there ever any syncope. She had not observed any decidual shreds.

On January 24th she consulted her physician, who told her she was having a miscarriage and prescribed for her. She was admitted to the Frederick Douglass Memorial Hospital, and came under my care on February 1, 1898. An examination under anæsthesia revealed the uterus in a normal position, somewhat enlarged. The cervix was softened; the cervical canal not patulous. A boggy, vascular mass filled the right side of the pelvis and the space posterior to the uterus, fixing the latter. Taking into consideration the menstrual irregularity, the intense pain and persistent nausea, the sensitive breasts, and the physical signs, a diagnosis of unruptured tubal pregnancy was made and immediate operation urged. Her physician, wishing consent of patient's relatives, objected, so patient was permitted to come out of anæsthesia. Operation was performed on the following morn-

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ing, the patient, in the interval, being carefully watched, presented no evidence of anything unusual—in fact felt much better—the only thing suspicious was that her pulse, which had been 80 previous to the examination, ran up to 110, but gradually diminished to 90 at the time of operation. The abdomen, which on the previous day had been flat, was now distended, and as soon as opened huge clots and much free blood were encountered. Enucleation of the sac was difficult and occasioned some bleeding. It was found to be intimately adherent to a mass on the opposite side of the pelvis. It was finally freed, a ligature applied, and excised. Attention was now directed to the mass on the opposite side, which was found to be a dermoid tumor of the left ovary, about the size of an orange, firmly adherent to the surrounding viscera. It was carefully enucleated and removed. The fœtus was not found. The toilet was made in the usual manner and the abdomen closed without irrigation or drainage. The pulse after operation was feeble and rapid, running as high as 140. A pint of normal salt solution was introduced beneath the mammary gland, this promptly increased it volume and reduced it to 120. The patient passed through a normal convalescence.

This case is of interest on account of the dermoid tumor of the opposite side, which rendered diagnosis difficult and greatly enhanced the difficulty of operation. In a cursory examination of the literature I have failed to find record of a similar case. The fact that both ovaries had to be sacrificed in the removal of these conditions, from so young a woman, was cause for regret. The uterus was not removed, as there was no evidence of uterine disease and no reason in the mind of the writer why a woman already depressed from concealed hemorrhage, should be subjected to an increased element of shock by thus prolonging the operation.

Discussion.

Dr. J. M. Fisher: I am especially interested in the case reported owing to the tumor that complicated the ruptured pregnancy. I was called to see a patient several weeks ago in consultation with Dr. Duval in the southern portion of the city, and from the history of the case and the appearance of the woman I was convinced of the fact that she had suffered from an internal hemorrhage sometime previously. I found that the lower portion of the abdomen presented dullness on both sides as well as in front, and, on making a pelvic

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examination per vaginam, I was convinced that the mass I felt was a large quantity of blood that had been poured into the abdominal cavity. I advised operation, and patient was sent to Jefferson Hospital. The following morning Dr. Montgomery made an abdominal section, and the first thing he encountered was an ovarian tumor the size of a child's head, and after bringing up and ligating this a considerable number of blood-clots were turned out, and on directing his attention to the opposite appendage he found this to be the seat of a ruptured tubal pregnancy. My impression is that upon making the pelvic examination in this case I located the mass more particularly on one side, and came to the conclusion that rupture had taken place into the folds of the broad ligament which, to my surprise, however, proved to be a cystic growth, while the opposite tube, which I had supposed to be intact, was ruptured.

Dr. Frank W. Talley: I listened with considerable interest to the report of Dr. Erck's case, and wish to congratulate him upon having made the diagnosis of extra-uterine pregnancy before rupture, even though he did not have an opportunity of operating before rupture. The case impresses the fact that operation should follow as quickly as possible after the diagnosis of extra-uterine pregnancy has been made. In connection with the discussion of Dr. Erck's paper, I would present also a specimen of extra-uterine pregnancy which I removed last Monday at the Polyclinic Hospital. The diagnosis of extra-uterine pregnancy was made and the operation was performed before rupture took place. The case was that of a girl 22 years of age, who had given birth to one child and had had four miscarriages. I refer to this as opposed to the belief that tubal pregnancies are ingrafted upon exfoliated or diseased tubes and after long period of sterility. This patient had had a miscarriage in November. In January she again believed herself to be pregnant, and about three weeks ago she fell down a flight of steps, striking her abdomen. This was followed by a flow of blood from the uterus and the passage of some clots and shreds. She did not recover her health, however, after the passage of the clots, and supposed that she had had an incomplete abortion. I had the pleasure to see her with Dr. Craig last week. At that time the examination of the cervix showed a canal which was narrow and no evidence of recent dilatation, such as the passage of an embryo would occasion, uterus enlarged, and at its left side a mass about the size of a lemon. The patient had considerable pain. With the history of supposed pregnancy and of having passed membranes from the uterus, from the condition of the

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cervix not indicating the uterine pregnancy, and from the easily recognized vascularity of the tumor, I concluded that the case was one of tubal impregnation. The specimen is rather interesting from the fact that the tube is apparently healthy. The fimbriated end of tube loses itself in the sac containing the embryo. The ovary is flattened out and forms a part of this sac. On the inner surface of the ovary is a small ruptured blood-cyst which is probably the corpus luteum of the present pregnancy. Upon opening the sac an embryo about two inches in length shows itself. The walls of much of the sac are apparently formed of thin peritoneum. Such a condition, I think, is either an impregnation in the fimbriated end of the tube which had previously attached itself to the ovary, or the impregnation of a hollow fimbrium, or the impregnation of an ovarian sac, which is often well formed in the human species. Probably the theory of impregnation of an ovarian sac is the most plausible one.

Dr. E. E. Montgomery: These cases are extremely interesting from the diagnostic standpoint. I was particularly impressed with the difficulty in diagnosis in the case related by Dr. Fisher. The woman, unaware that she had an ovarian cyst, supposed herself pregnant. All the symptoms of internal hemorrhage were present and the rupture evidently occurred a few weeks before the time she came under Dr. Fisher's observation. At the time the operation was done, the abdomen was considerably distended. A mass could be felt. The tumor formed a part of the wall of the encysted sac, which contained the accumulated blood Knowing that we had to deal with a chronic condition and feeling that by an incision through the vagina I could best obtain my object, I opened into the Douglass' pouch, turned out a considerable clot and was able to distinguish the enlarged tube upon the right side which entered the sac. On the left side I recognized the wall of the cyst as forming part of its barrier. The size of the cyst was such that it could not, without being punctured, be brought through the vagina, and as we were unacquainted with its relations we felt it better to make an abdominal incision. After making the incision, rather for the purpose of disturbing Dr. Fisher's certainty of diagnosis, I first drew out the cyst, subsequently raised up the ruptured sac in the right tube. The physician may very easily be in doubt as to whether the condition is one of ruptured tubal gestation, ruptured ovarian cyst, or other pelvic collection. I wish to second what Dr. Talley has said in regard to the importance, wherever diagnosis of unruptured tubal gestation can be made, of

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urging prompt operative interference. Such a condition demands operation just as much as if the patient was suffering from a malignant tumor. A case of the kind came under my observation a few years ago; the patient was brought into the clinic suffering from pain and distress in the pelvis. I found a retroverted uterus, and to its left a mass beneath which there was distinct pulsation. The patient had ceased to menstruate for a couple of months. The cessation of such symptoms made me feel certain we had to deal with a tubal gestation which was not ruptured. The physician who brought her to the clinic desired to make an examination. While he was doing this, I left the room, but was called back a few minutes later to find the patient covered with cold respiration, with pinched countenance, sighing respiration, and almost pulseless, all the indications of complete relapse. Diagnosis of ruptured tubal pregnancy and internal hemorrhage was made. The condition was explained to her daughter who accompanied her, but she was unwilling to take the responsibility of granting an operation, therefore I sent my carriage for her husband, and on his arrival explained the situation to him and gained his consent. The patient was at once subjected to operation, and although we secured the bleeding vessel the patient succumbed from the effect of the hemorrhage and died a couple hours later. The abdominal cavity contained considerably over a quart of fluid blood. Such cases without question justify the importance of immediate resort to operative interference.

Dr. L. J. Hammond: I am much interested in this subject because I have on several occasions erred in my diagnosis. After, however, combining the previous history with the physical signs present at time of examination I have been more successful. The history, which has been in three cases a long period of sterility after several abortions, and then absence of menstrual periods for, say two or three months, with the additional fullness on one or the other side, enabled me in the last three cases I have seen to make my diagnosis correct. Therefore, I have felt by examination alone it it almost impossible to determine tubal gestation, but that the history will greatly aid us.

I would like to ask how Dr. Erck determined this tumor a dermoid cyst, as it does not present the appearance of having been opened, and the exterior resembles an accumulation of small cysts.

Dr. Erck: The cyst when removed was liquid. Hair and bones could be felt in it.

Dr. E. E. Montgomery: At the last meeting of this Society I reported a case and said that her urine contained a considerable

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amount of albumen. I felt uncomfortable in making the report, as it included two operations on the kidneys, and with this symptom some two months subsequent. The patient, however, since tells me she had an attack of grippe and the albumen has entirely disappeared from the urine, and at present there is entire absence of any other abnormal symptoms, showing it was only temporary in character. I was rather nonplussed at the time for the reason that she went away from the hospital free from trouble, and I feared lest by interference with both kidneys I had done her injury instead of good.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

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CLINICAL PHENOMENA RELATING TO THE NERVOUS SYSTEM IN CONNECTION WITH DISEASE OF THE FEMALE GENERATIVE ORGANS.*

By A. F. Currier, M.D., New York.

It is with a sense of diffidence and more or less of a consciousness of temerity that I reopen a subject which has been illuminated by the contributions of some of the most distinguished members of the Philadelphia profession.

A review of the voluminous literature of this and collateral subjects could not fail to impress one with the weight which is attached, both at home and abroad, to the opinions and conclusions upon this subject of Weir Mitchell, Goodell, Baldy, and others of your colleagues, and perhaps arouse the thought that the theme is well-nigh exhausted. If the latter is true I beg but to be allowed "a Parthian shot."

So richly has the field been worked that its investigation has caused an occasional feeling of the weariness which Buckle experienced in reading the many volumes of sermons by Scotch theologians while preparing his history of "English Civilization." Matthews Duncan experienced a similar weariness so long ago as 1879, when the subject was yet young, but he expressed a sentiment with which I can cordially agree, that the remainder, after the sifting, was of great value.

"The therapeutics of the diseases of women," says this acute observer, "is not founded on peculiar knowledge, it has no peculiar methods, no special mysteries. The specialty is in the physician, not in the disease, and every special physician ought studiously to oppose this inevitable tendency to err from the truth (referring to much of the literature relating to diseases of the uterus and ovaries)."†

In a recent contribution upon "Heredity as a Factor in Insanity," Dr. Henry P. Stearns, a distinguished alienist of many years' experience says: "All acquired characters and changes in the physiological activities of the system, whether physical or mental, are affected primarily and essentially through influences acting upon the nervous system.

*Read. For *Discussion*, see page 162.

† *St. Bartholomew's Hospital Reports*, London, Vol. XV., No. 1, 1879.

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"That portion of the sensory system of nerves which has a distinct relation to the ovaries and their product is among the earliest in development and is related to the primary instincts and profoundest activities of the organism. Provision is therefore early made in embryonic life for the future conveyance of radiation of organic energy from the brain to influence them."

Hering observes: "We notice further on that the development of germs which are destined to attain an independent existence exercises a powerful relation, both on the unconscious and conscious life of the organism and this is a hint that the organ of germination is in closer and more momentous relation to the other parts, especially to the nervous system, than any other organ. In an inverse ratio the conscious destinies of the whole organism, it is most probable, find a stronger echo in the germinal vesicles than elsewhere."

Hence disease of the cells of the central nervous system must have a decided influence upon the organs and the products of their function which are under their influence in a normal state of activity.

If disease of the cortex arrests menstruation it must modify the infinitesimal elements of the germ plasm which are the representatives of the characters of the future organism.

This organic connection between cortex and ovaries is more intimate in some persons, families, and races than in others, hence difference in transmitted characteristics.*

It will be desirable to bear the foregoing statements clearly in mind in the development of the subject which is under consideration.

If it is probable that action between nerve-centers and the essential organs of generation by well-defined paths is so significant, is it not also probable that the converse is true of influences which proceed from organs of generation to nerve-centers.

I beg to call attention, next, to the relations which the nerve-supply of the generative organs bears to that of other portions of the body and would also apologize for introducing material which is somewhat elementary before an audience like this.

It is but brushing the cobwebs from memory's walls. The investigation of the anatomy of this portion of the nervous system has been a work of great difficulty and has linked to itself distinguished names, among which may be mentioned the two Hunters, Tiedemann, Robert Lee, Hirschfeld, and Frankenhäuser.

Robert Lee, who made repeated dissections of the gravid uterus

* *New York Medical Journal*, p. 885, December 25, 1897.

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at different stages, when the nerves had undergone decided enlargement (though both the Hunters denied persistently that such enlargement ever occurred during pregnancy) has left an interesting memoir with plates showing the minutest details of its nerve-supply and that of the contiguous organs.*

The nerve-supply of these organs is as rich as that of any organs of the body. Why should it not be so when we consider the important functions of menstruation, coitus, pregnancy, and the menopause which are to be served by them?

This supply is entirely from the sympathetic system, but communication is established with the cerebrospinal system by communicating links between the sympathetic, lumbar, and sacral nerves, and the corresponding lumbar and sacral nerves of the cerebrospinal system. From the latter the path is direct to the motor center of the uterus in the medulla, and probably indirect to other portions of the brain.

The sympathetic center for the uterus is the aortic plexus. (Plexus uterinus magnus, Frankenhäuser), from which is derived the hypogastric. The latter divides and is distributed to the uterus, vagina, and bladder, and, by its connections, to the descending colon, sigmoid flexure, and rectum.

The center for the ovaries and tubes is the spermatic plexus which arises from the aortic and is connected with the renal. The renal communicates with the solar plexus and by the ramifications of the latter with the heart, lungs, and stomach, hence the important chain of influences which may be excited when the uterus or ovary is irritated, heart, stomach, kidneys, intestines, bladder, lungs, and brain being possible sharers in the response. It is this anatomical nexus which has given foundation for the observations concerning uterine and ovarian reflexes, and is doubtless the explanation of many of the curious phenomena which are associated with these various organs. The anatomical relationship being demonstrated the physiological and pathological consequences and coincidences become reasonable and intelligible, and I am quite prepared to agree with Calkins, who states in an interesting article on "Uterine and Ovarian Reflexes" (*Medical and Surgical Reporter*, Vol. LI., pp. 312, 340, 1884), that "local pathological changes are often wanting when great reflex disturbance exists."

It is willingly conceded, however, that a statement of this character should not be allowed too much latitude, and we should rather

* "Memoirs on the Ganglia and Nerves of the Uterus," London, 1849.

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accustom ourselves to the discovery of material lesions in these organs when seeking to relieve disturbances which are referable to them or to the organs with which they are associated.

What are some of the effects of uterine and ovarian irritation—and for this purpose these organs may be regarded as one, since by virtue of their anastomoses they have essentially the same rich sympathetic nerve-supply?

In the alimentary tract the effect may be arrest of glandular secretion with gastric or intestinal dyspepsia, nausea, and vomiting, and countless familiar symptoms which are associated with such disturbance.

In the heart the effect may be an increase in the rate (tachycardia) as well as in the degree of its contractility, the valves may become incompetent, and there may result in consequence, a modification of the entire circulation.

In the lungs, larynx, and pharynx the irritation may give rise to an annoying cough, to dyspnea, and other phenomena of asthma.

In the kidneys there may be a partial arrest of the urinary secretion, or if paralysis of the vessels of the kidneys has followed irritation there may be an abundant discharge of pale urine of a very low specific gravity.

In the rectum and sigmoid flexure there may be arrest of secretion with constipation or, on the other hand, an annoying diarrhea.

In the bladder constant irritation may be present with persistent inclination to micturition.

In a similar manner the eyes, the skin, the brain, and other organs and tissues less frequently, may show by their disturbed condition their sympathy with a disordered condition of the organs of generation.

Whether one form of irritation in the uterus or ovaries produces these varied consequences in other parts, the local conditions in the uterus and ovaries differing with the disease which affects them, or whether there are different forms modified by local conditions, I do not know and am not aware that any one has as yet found out, but the fact of the interaction and intercommunication of the different organs has been observed so frequently and by so many observers of experience and matured intelligence that its trustworthiness ought to be accepted.

It may be said—the phenomena which have been referred to are those of hysteria, and no doubt, such a diagnosis would be correct in many cases, but on the other hand, these phenomena may present

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when no lesion of the uterus or ovaries is apparent, and again very marked lesions of the uterus and ovaries may be quite unattended by them.

Some of the determinable conditions relating to the uterus and ovaries which coexist with disturbance in more or less remote organs are neoplasms, which apparently act by their pressure and their interference with nutrition, undeveloped organs with their faulty arrangement for the performance of function, displacements with the disturbance of circulation and nutrition which sometimes, but not always, results; inflammatory deposits and conditions with their septic influences and their palpable local effects in addition to their reflex or remote influences.

These correlations are doubted by many and are attributed to the overwrought enthusiasm of gynæcologists.

The patients are frequently sensitive, hysterical, and foolish. The only course for the gynæcologist to follow is to remove or otherwise use remedial measures to organs and tissues which are diseased; if troubles in other organs are not also relieved, he has at least removed a palpable cause of mischief. A hysterical woman, after a surgical operation, remains a hysterical woman, the seat of her disposition not being in her genital organs, though it is probable that the removal of those organs from young or middle-aged women has a more decided effect upon the disposition than their removal from those who have passed the menopause.

Other influences which may be contributory to the lesions of the genital organs in producing the conditions which are under consideration are the alcohol habit or any kindred vice, inherited tendency to disease of various kinds, unusual experiences—such as accidents, great calamities, overpowering emotions, also a weak and unstable disposition, etc.

To what degree the diseased condition is due to the genital organs, and to what degree to the contributory influence is not always easy to determine and hence the radically different means of treatment by those who work along different lines of practice.

Success in treatment will be governed by various factors including the submissiveness of the patient, and the force of will, the judgment, and the skill of the physician, but it may be affirmed without hesitation that whatever the disposition of the patient may be, a positive anatomical lesion cannot be charmed away by any suggestion nor can the conditions which depend upon that lesion.

That the primary lesions and the disturbances which result from

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them are susceptible of various modes of treatment is amply shown by the variety of methods which have been in vogue from year to year as our pathological and therapeutical views have shifted from one point of view to another.

A generation and more ago uterine pathology was simple and its chief apparent lesion was ulceration of the os uteri. The treatment was equally simple and consisted in the liberal local use of the pure nitrate of silver. It is not to be supposed that the results of this treatment were uniformly bad or it would not have been so long persisted in. A logical step from the bad results of this method was the splitting open of the cervix so earnestly advocated by Simpson and Sims, and from the extravagances of this method again the sewing up of the cervix with its collateral operations. Incidental to this period was also the pessary period, when human ingenuity was taxed on the one hand to find a deviation of the long-suffering uterus from its correct inclination, and on the other, to invent an instrument or machine, of varying degrees of utility, to bolster it up.

Too often the pessary has been adjusted by unskilful hands when its only effect has been a bad one. Too often the operation has been done for so-called laceration of the cervix and perineum when Nature could not be blamed for lesions which she had not created.

Finally came the abdominal-section period with the removal of countless ovaries and tubes and the unbecoming strife on the part of many men to make numerical records by means of the trophies which were thus obtained. Like the mother of the Gracchi in their annual reports, labeled "my year's work in laparotomy," they proclaimed to the world "these are my jewels." Do not think that these remarks have ridicule for their aim and intention. They are made rather with a feeling of deep regret that cause and effect are apparently not weighed in all cases with that judicial sternness which should be exercised before important organs are removed from the body.

From these multifarious operations, good and bad, many cures have resulted, sometimes temporary, sometimes permanent. It is well to remember that while successes are generally recorded, failures are by most men, preferably wrapped in the veil of silence.*

* Angelucci and Pieraccini (*Rivista sperimentale*, June, 1897) obtained reports from asylums and psychiatric clinics of 115 cases in which operations had been performed upon women to combat some nervous disorder or remove diseased genital organs. In this number there were 6 simulated operations for hys-

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It is fair to believe that as the result of the experience of the past fewer unnecessary operations are being performed than formerly. This is certainly true with those who have acquired the power of discrimination and self-restraint by some years of experience.

There is still occasion for the abandonment of much that is superfluous in the treatment of the diseases which are peculiar to women, and for the practice of a real conservative surgery, a cardinal principle of which has always seemed to me to be that no organ or tissue which can properly be saved, either wholly or in part, should be sacrificed. The field of useful work will remain a broad one when these unnecessary and undesirable elements shall have been eliminated.

The deleterious influence of surgical operations upon the nervous system is by no means the consequence of operations upon the genital organs alone; literature abounds with illustrations of such a consequence after operations of all kinds and degrees. Traumatic insanity is a condition which has long been familiar to surgeons in every avenue of surgical practice and neuroses have often been ob-

terical conditions, in 65, healthy organs were removed to cure nervous disease; in 18, diseased organs were removed from nervous women; in 26, diseased organs were removed from women who were neither insane nor hysterical; in 41, healthy organs were removed from women who were hysterical. Of the latter series 17 became insane, 10 became more hysterical, 11 were unaffected, 3 were cured.

From 18 other hysterical women diseased organs were removed, 3 of them becoming insane, 6 unaffected, 9 cured.

From 24 who were neither hysterical nor insane, diseased organs were removed, insanity resulting; 2 others became neuropathic.

From 24 insane women the healthy organs were removed, 19 becoming worse in consequence, and 5 cured.

Schauta, *Wien. Med. Blätter*, Vol. IX., pp. 601, 633, 1886. "Narration of Cases of Pelvic Disease Cured by Local Applications, Pessaries, and Discission of the Cervix."

Chrobak, *Wien. Med. Presse*, 8, 1869. "Narration of Cases of Retroflexion with Neuroses of Respiration, Cured by the use of Pessaries."

Kinsman, *Obstetrical Gazette*, Cincinnati, Vol. I., p. 195, 1878. "Metritis with Neuralgia Cured by Vaginal Applications."

Little, *Medical Times*, Philadelphia, Vol. XI., p. 581, 1880. "Various Disorders of the Eyes, Apparently Dependent upon Uterine Disease, Relieved When the Latter Was Cured."

Wylie, *Medical Record*, August 4, 1894. "Narration of Three Cases of Melancholia Dependent upon Uterine Disease and Cured by the Relief of the Latter."

A case of pronounced asthenopia in a lady of seventy-one, was relieved after the removal of the prolapsed uterus by the writer. The uterus was not removed on account of the eye trouble which was supposed to be an incident of old age. The testimony as to relief was unsolicited.

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served which gave no evidence of their presence prior to operation, or, being present, were intensified after operation.*

Some writers have affirmed that neuroses and psychoses following operations upon the eyes exceeded all others in frequency.†

The neuroses and psychoses which follow the simple administration of an anesthetic have led Savage to remark that "any cause producing delirium may produce a more permanent disorder of the mind."‡

In view of the intimate relationship between the nerve-supply of the uterus and ovaries on the one hand, and the viscera and central nervous system on the other, there is no occasion for surprise that traumatisms of the former should be followed by undesirable consequences in the latter, and their degree is not necessarily measured by the magnitude of the traumatism.§

Aside from this nerve connection there are also other *predisposing* factors which must be taken into account, the sensitiveness of temperament in women, heredity, anemia from losses of blood from constipation, or from impoverished nutrition, influence of poisons of various kinds (iodoform, carbolic acid, septic intoxication), diminished resisting power on account of the alcohol or other drug vice,

*Clevenger, *Alienist and Neurologist*, p. 449, July, 1888. "Traumatic Insanity and Other Effects of Head Injuries."

Cowen, *Journal of Mental Science*, London, Vol. XLII., p. 122, 1896. "Types of Traumatic Insanity, (after Head Injuries)."

Barwell, *Lancet*, Vol. I., p. 522, March 21, 1885. "Insanity After Ovariotomy, (or as a Sequence of Any Major Operation)."

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII,, p. 642, June 29, 1893. "Insanity Following Surgical Operations." (Insanity may follow the most trivial operations as well as the most serious, but it occurs more frequently after gynæcological and cataract operations than after others.)

†Simpson, *Journal of Mental Science*, London, Vol. XLIII., p. 86, 1897. Schnabell is quoted as observing post-operative insanity twelve times in 186 eye operations.

Martin, *Mémoire et bullétin Société de médicine et chirurgie de Bordeaux*, p. 188, 1895. "Insanity after Operations for Cataract."

Sousa-Refoios, *Revista de medicina e cirurgia*, Lisbon, Vol. I., p. 33, 1894. "Insanity after Operations for Cataract."

Hochwart, *British Medical Journal*, L., Vol. XC., p. 1509. Psychical disorders are more frequent after eye operations than others because of (1) nerve tracts which connect the eye and the brain, (2) irritated sensory organs which often cause insanity, (3) predisposition (in cataract) from previous condition of blindness, (4) advanced age of cataract patients.

‡ *British Medical Journal*, Vol. II., p. 507, 1887.

§ See appendix for cases illustrating this statement.

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the sudden suppression of an important function, weakness from old age or from the wasting effects of disease.

It is somewhat remarkable that these consequences are not more frequent, more severe, and more persistent, when we consider the possible number and variety of complicating conditions. The explanation may be that nerve communications are cut off in some cases and a healthier condition of nutrition is established in others along the nerve tracts.

In general, in any case of disease of the female genital organs in which disorder in related parts fails to appear, or having been present disappears after treatment or operation, we may conclude that some change of a reparative character has taken place along the path by which nerve impulses are conducted from one of these stations to the other.

Of all the possible ulterior consequences of the operations to which these organs are subjected there are two which are especially noteworthy, pain and disturbance of the mental equilibrium. Few operations are unattended by pain as a sequel. True, neither its intensity nor its duration may be great, and the congestion which is chiefly responsible for its presence may quickly subside if the conditions during and after the operation have not been improper or unfavorable. But there is still much to be learned in respect to the pain which so often persists long after the patient has recovered from the immediate effects of the operation.

For this symptom the surgeon is often responsible, assuming that his operation was one which was demanded and that it removed the lesion for the removal of which his assistance was sought. If in any given case the intestines become more closely adherent than before the operation, if a hard mass of exudate fixes the contents of the pelvis, if a quantity of ligatures irritates the tissues which they inclose, and if an unsightly scar upon some portion of the skin excites unpleasant emotions whenever it is irritated, there is at least a suspicion that the surgical technic in the case has been faulty.

For my part I look forward to the day when few ligatures will be left in the abdomen, and none will be buried in the tissues, when a protecting covering of some innocuous material will replace destroyed peritoneum, and when the endermic suture or some modification of it will reduce the surface scar to the minimum. There are surgeons who have already wellnigh accomplished perfection in technic; when this devoutly to be wished consummation becomes more general there will be less pain.

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I have used the phrase, disturbance of mental equilibrium, advisedly and deliberately concerning the sequels of gynæcological operations. Of this condition there are many illustrations, of insanity after operation there are relatively few. Tait's statement, based upon a personal experience in 7000 gynæcological operations, is that only seven cases of insanity resulted, the percentage being no greater than the ordinary percentage of insanity in the adult female population. (*British Medical Journal*, Vol. II., p. 497, 1889.)

Rohé ascertained by circular inquiry from the lunatic-asylum superintendents throughout this country that during the ten years from 1883 to 1893 there had been in all the institutions under their care only twenty-five cases of insanity which had followed operation upon the female genital organs. These were probably insanities of a more or less persistent form and were regarded by Rohé as that variety which has occasionally been observed in women who have not been subjected to operation and which was coincident with the occurrence of the menopause. Of the 25 cases, however, 7 recovered, 2 were discharged improved, 4 died, and 12 remained under treatment.* Of other reported cases in which insanity was permanent Vène reports 5;† Sears, 16;‡ Jones, 1;§ Werth, 2;‖ Manton, 2.¶ Other cases of this character may have been reported, but have escaped my search.

Of all cases of insanity of this variety, whether curable or incurable, permanent or temporary, I have been able to find the record of only 355, and many of these have probably been reported twice in the tables of writers who have recorded cases in addition to their own.**

By far the largest proportion of this total number, *viz.:* 251, is

**New York Medical Journal*, Vol. LVIII., p. 437, 1893.

†*Paris thesis*, No. 220, 1891.

‡*Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642.

§*Lancet*, Vol. I., p. 639, 1885.

‖*Verhandlungen der deutschen Gesellschaft für Gynäkologie*, Vol. II., p. 60, 1888.

¶*Annals of Gynæcology and Pediatry*, p. 714, September, 1897.

**The following table represents such cases of insanity after gynæcological operations as could be found in the records of the past twenty years.

Reporter.	Number of cases.	Result.
Angelucci and Pieraccini	44	not stated.
Thomas	26	"
Sears	57	"
Homans	2	"

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given without specific details and many must be deducted on account of repetition. Of the individual cases which are narrated in detail and are usually to be relied upon almost all (80) ended in recovery, only 16 were fatal, and only 8 incurable.

While perfectly conscious that these records are inaccurate they are useful in showing that the result in the great majority of cases is recovery.

To go into further detail in this matter is principally to repeat what has already been said by others. It is therefore best to say it as summarily as possible. The transitory or curable cases include by far the great majority of the total number. The type has been referred to by Wood* as acute confusional insanity, though, of course, it is by no means unvarying.

Reporter.	Number of cases.	Result.
Lyons	2	cured.
Holmes	3	"
Sprague	1	death.
Jacobs	3	"
"	2	cured.
Simpson	1	"
Edinburgh Royal Infirmary	10	not stated.
Edis	1	cured.
Sears (private cases)	2	"
" " "	1	incurable.
Vène	5	"
"	11	death.
"	52	cured.
Davezac	1	"
Régis	1	"
Ill	2	"
A. Martin	2	not stated.
Werth	3	cured.
"	2	incurable.
"	1	death,
McKone	1	cured.
Lawrie	2	"
Segond	3	"
Barwell	1	"
Doran	1	"
Meredith	1	"
Butler-Smythe	1	"
Le Dentu	38	not stated.
Kiernan	65	"
Tait	7	"
Total	355	

**University Medical Magazine*, Vol. II., p. 117, 1889.

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To the gynæcologist unversed in neurological nomenclature the condition may be regarded as melancholia or mania, taking its characteristics according to the temperament and surroundings of the individual.

It is hardly fair to attribute to the effect of surgical operation those cases of insanity which develop months after the operation was performed, unless there is a gradual progression of the bad symptoms which culminates at length in definite mental alienation. From the half-dozen cases of post-operative insanity which I have seen and my deduction from the experience of others, I should classify it, with reference to its origin, as (1) the traumatic, (2) the toxic, (3) insanity with predisposition.

1. *The Traumatic.*—There are many women who bear any form of pain or shock badly, even a headache, or the pain of menstruation, or of childbirth unsettling the mental balance. It is not remarkable that the same effect should be produced by shock to the nervous system from the contemplation of a proposed operation, by the actual performance of it, and by the pain which may follow it. Especially does such a result seem intelligible when the uterus or ovaries are removed and the sensitive relations with the rest of the nervous system disturbed. This result has happened repeatedly after the performance of ovariotomy. (See appendix for illustrative cases.)

It may be manifest as soon as the unconsciousness of anesthesia is over or it may occur at any time within the ensuing week. If it happened at a later period it would not usually belong to this category. It usually ends in complete recovery, its duration varying from a few days to six months. Rarely it ends in death from suicide or other causes, more rarely still it becomes permanent.

2. *The Toxic.*—Insanity of this variety may have numerous causes, and in point of fact the operation may be the least efficient among them. Chemicals, especially iodoform and carbolic acid, have produced it, also ether and chloroform; while the poisonous products of decomposing secretions absorbed into the circulation are responsible for others. The organs of elimination in all cases of this variety are defective, though the fault is sometimes attributable to an excessive dose of the poison administered. The attack, like that of the traumatic variety, is usually within a week from the time of operation and manifests itself in the form of a noisy delirium which is the more annoying at night. The result will depend upon the quantity of poison absorbed and the resisting power of the patient. Such insanity is seldom permanent, the patient dying promptly from the

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effect of the poison or recovering when it has been eliminated or exhausted.

3. *Insanity with Predisposition.*—The effect of the operation in this variety is superadded to a mental condition which is already trembling in the balance. Women who are decidedly hysterical, who are melancholy, who inherit a tendency to insanity, who are exhausted by excesses in alcohol, in venery, or in vice of any other character are its victims.

Such women are unfavorable subjects for operation. The mental disorder is slower in its determination than in the other varieties and it is more likely to be permanent. I know of complete recovery in one case and there are doubtless others, but the prognosis, as far as restoration to mental soundness is concerned, is distinctly worse than in either of the other varieties.

The conclusions which may be drawn from the foregoing statements are as follows:

1. The nerve connections between the uterus and ovaries on the one hand, and the viscera and central nervous system (cerebrospinal) on the other, are such as to warrant the belief in the abundant transmission of influences from the one to the other. As a corollary the removal of morbid conditions from the uterus and ovaries frequently results in the amelioration of disturbance in remote but related organs.

2. Surgical operations upon the female genital organs are sometimes followed by lesions of the nervous system, but not with much greater frequency than operations upon other structures. Their relative infrequency, especially when the uterus or ovaries are removed, demonstrates the wonderful accommodative power of the physical forces.

3. Insanity after operations of this character is of rare occurrence as a primary result of such operation and is usually transitory in its nature.

Appendix with Reference to Illustrative Cases of the Three Varieties of Post-operative Insanity.

I.

Sprague, *American Medico-Surgical Bulletin*, Vol. IX., p. 592, 1896. Mania eighth day after operation for lacerated cervix; death on the fifty-first day.

Jacobs, *Journal de Médecine de Paris*, Vol. VIII., p. 309, 1896.

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Insanity in three days after curettage and colpoperineorrhaphy; slow but complete recovery.

Insanity one day after hysterectomy; slow but complete recovery.

Insanity one day after hysterectomy; cure in eight days.

Insanity in a hysterical woman the second day after ovariotomy; fatal.

Ill, *Pittsburgh Medical Review*, Vol. II., p. 1. Delirium, then melancholia ten days after abdominal section; cure.

Melancholia, eight days after abdominal section; cure.

Melancholia, one day after operation on the urethra.

Werth, *Münchener medicinische Wochenschrift*, p. 387, June 5, 1888. Six cases of insanity in three hundred hysterectomies and castrations. Two cases began eight days after operation. Two cases began after a few weeks. Two cases began after recovery from the operation. In 3 cases there was inherited disease. In 3 cases the menopause had been passed. One case recovered in 15 days; 1 case in 4 months; 1 case in 6 months. Two cases remained insane; 1 case ended in suicide.

McKone, *Medical Sentinel*, Portland, Ore., p. 330, August, 1894. Mania, fifth day after hysterectomy; recovery in six weeks.

Lawrie, *British Medical Journal*, Vol. I., p. 132, 1895. Insanity (two cases) after hysterectomy; recovery in three months. One of the patients was sixty-six years of age.

Discussion, London Clinical Society, *Lancet*, Vol. I., p. 522, March 21, 1885. Doran, Tait, Meredith, Edis all reported cases of insanity after ovariotomy lasting from ten days to two months.

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642, June 29, 1893. Ovaries removed for tubercular salpingitis of two-years' standing. Nervousness and hallucinations after six days. Permanent melancholia.

II.

Barwell, *Lancet*, Vol. I., p. 522, March 21, 1885. Ovariotomy; left ovary removed; carbolic-acid spray; hematuria and uterine hemorrhage three days. Insanity on the eighth day. Recovery after twenty-five days.

(This history shows that the insanity may have been due to carbolic-acid poisoning plus sepsis.)

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642. Operation for pelvic abscess, the healing process lasting seven weeks. Bad recovery from anesthesia; pseudo-epilepsy on

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the sixth day; aphasia, deafness, somnolence, mental cloudiness. Mental symptoms relieved in five weeks.

Butler-Smythe, *British Journal of Mental Science*, p. 389, 1893. Ovariotomy; carbolic acid in urine; much sloughing; rupture of rectum thirteen days after operation; depression prior to operation. Mania on the fourteenth day lasting seven weeks; ultimate recovery.

III.

Lyons, *American Gynæcological and Obstetrical Journal*, September, 1897. Mania four months after operation for lacerated cervix; recovery after two months.

Melancholia two monshs after perineorrhaphy; recovery after six months.

Jacobs, *Journal de Médecine de Paris*, Vol. VIII., p. 309, 1896. Melancholia six months after hysterectomy; death in four weeks.

Melancholia three weeks after curettage for chronic endometritis, paresis, aphasia; death.

Davezac, *Journal de Médecine de Bordeaux*, October 15, 1893. Melancholia fifteen days after ovariotomy. Recovery in seventeen days.

Régis, *American Journal of Insanity*, January, 1894. Insanity six months after removal of the appendages. Improvement under the use of ovarian extract.

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642. Ovariotomy; depressing experience after recovery from operation; melancholia after two months; recovery after nine months.

Jones, *Lancet*, Vol. I., p. 629, 1885. Insanity three days after ovariotomy from joy at finding tumor removed; condition persistent.

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URETERAL ANASTOMOSIS.*

By Howard A. Kelly, M.D., Baltimore.

While pelvic surgery has brought relief for many ailments, it has also brought with it at least one group of affections which is practically new, that is to say, surgical injuries to the ureters. Previous to the last decade ureteral fistulæ were only observed as a sequence of severe labors, generally instrumental, with extensive rupture of the cervix, tearing open the parametrium and dividing the ureter, and leaving behind a uretero-cervical or uretero-vaginal fistula. Now-a-days every operator of wide experience can recall cases in which he has injured a ureter, and others in which he has been called upon to repair ureteral fistulæ consequent upon his own operations or upon those of others.

In my own experience I have ligated a ureter twice in the enucleation of fibroid uteri and once in removing a cancerous uterus by the abdomen.

In another case of hysteromyomectomy, I cut the ureter in two and anastomosed it at once into itself, and in one other case the ureter, bared in making an extensive abdominal enucleation for a carcinomatous uterus, sloughed and left a uretero-vaginal fistula.

One of my associates at the Johns Hopkins Hospital had a ureteral fistula following hysterectomy for carcinoma, and in another case he cut half-way through the ureter, sutured the cut at once, and the woman recovered without leakage; the first case came back to the hospital and I anastomosed the ureter into the bladder successfully by the abdomen.

F. von Winckel estimates the frequency of ureteral fistulæ to the

* Read. For *Discussion*, see page 170.

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number of total extirpations of the uterus as 17 in 774 or 2.2 per cent. A. Martin had two cases of ureteral injuries in 202 total extirpations.

F. B. Robinson reckons an average of 3 ureteral injuries to 100 hysterectomies.

My own average is something under 1 in every 500 abdominal sections for all purposes.

It is important in attempting to estimate the frequency of these accidents to bear in mind that the number of fistulæ actually seen is but an index of a far larger number of cases in which one or both ureters have been clamped or ligated, in which the patient dies and the injury never comes to light. I feel safe in making this estimate as I consider the chances for the recovery of a patient after an operation with a ligated ureter are greatly diminished, and if she does recover the accident may not be known unless the attempt is made to catheterize the ureter.

In the experiments made upon dogs, ligating one ureter, it has been found that the kidney may atrophy and cease its function entirely without loss of life.

In like manner, R. Bastianelli (*Annali di Obst. e di Gyn.*, No. 2, 1896; see Frommel No. X, p. 351) had the hardihood to ligate a ureter, accidentally cut, and drop it, and the patient recovered with an atrophied kidney.

In another instance cited by Tuffier and Levi, the ureteral end was found so distant from the bladder and embedded in adhesions that an anastomosis could not be made, and on account of the feeble condition of the patient nephrectomy was not to be thought of. Under these circumstances the ureter was ligated with a view of causing atrophy of the kidney, but in eight days the urine began to flow again through the fistula.

Ureteral fistulæ arising from surgical causes in this way open either on the vaginal vault or on to the abdomen in some part of the incision which has been made to expose the pelvic organs.

The operations liable to give rise to the formation of a ureteral fistula are:

Vaginal hysterectomy for carcinoma.

Abdominal hysterectomy for carcinoma.

Abdominal hysterectomy for pelvic inflammatory disease, with dense adhesions to the pelvic floor.

Vaginal hysterectomy for pelvic inflammatory disease.

Hysterectomy for fibroid tumors, especially for sub-pelvi-

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peritoneal and intraligamentary fibroids displacing one or both ureters.

A suppurative adherent fibroid tumor (Bernays).

The enucleation of broad ligament cysts.

The enucleation of adherent ovarian cysts.

The extirpation of a pyosalpinx.

The removal of a ruptured extra-uterine pregnancy (Shoemaker).

The removal of a lithopedion.

Operations upon cancerous ovaries.

Cystic adenofibroma of the ovary (Tauffer).

The extirpation of a papillomatous ovary (Fullerton).

Porro-Cæsarean operations.

Ureteral injuries occur during these various operations (1) through the ligation of one or both ureters, (2) by clamping them, (3) by puncture of a ureter with a needle carrying a ligature under a bleeding area, (4) by cutting a displaced ureter with a knife, (5) by creating a slough in the wall of the ureter with a cautery-knife or loop, or (6) by tearing off a ureter adhering closely to cyst or a malignant tumor.

Another and comparatively a new way in which a ureteral fistula may be produced, is (7) by baring the ureter and injuring its external vascular sheath (Waldeyer's), resulting in the formation of a slough with a fistula, and this, I think, will prove to be the commoner injury in the future.

While, as I have said, with the advent of the more radical methods of pelvic surgery a fresh crop of ureteral injuries has come to light, I believe that the closer attention which has been drawn to these injuries has resulted in more careful operating, and that we will find, in skilful hands at least, from now on that the ureters will be less frequently involved in the operation, and when they are injured the methods of immediate repair at our command will be employed thus greatly reducing the number of post-operative fistulæ observed. My own statistics, through the adoption of certain precautions dwelt upon below, show an entire disappearance of ureteral fistulæ due to the unforseen involvement of a ureter in a ligature, or due to the unexpected cutting of a ureter, and I am sure that the experience of every active surgeon is similar.

In order to avoid these injuries surgeons must bear in mind several important points in the technic of the various operations cited above.

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In the first place, in vaginal hysterectomy and in abdominal hysterectomy for carcinoma, I would insist upon the preliminary insertion of bougies into the ureters marking them out with the utmost distinctness, and making it impossible to injure them unwittingly.

With the use of the bougies the ureters are constantly within the touch of the fingers even when separated by a considerable interval of cellular tissue, the surgeon can then work fearlessly and rapidly in applying his ligatures, passing needle and carrier right down close to the ureter through a mass of tissue if desired, and the ureters can be dissected out for a considerable extent, from posterior to anterior pelvis, without injury.

Another important step in the technic of the vaginal enucleation of the uterus is the detachment of the bladder from the upper vagina and the anterior uterus and lifting it up like a flap with its ureters, away from the field of operation, as insisted upon by Paul Segond.

In abdominal operations in the wide enucleation of the carcinomatous uterus, removing glands and broad ligaments, the preliminary catheterization marking the ureters is almost a *sine qua non*, without this procedure the operation is greatly lengthened by the extreme care necessary to discover, dissect out, and avoid the ureters.

In all intraligamentary tumors the ureters must be borne prominently in mind, and, if possible, the tumor must be enucleated by opening the broad ligament near the uterus and then rolling the peritoneal capsule and the cellular investment over toward the outer side sticking close to the tumor proper; if the tumor is cystic this will be made easier by collapsing the cyst first.

When one of the ureters is displaced on top of a fibroid tumor it will not be necessary to deal with this complication directly if the plan is followed of beginning the enucleation on the opposite side and then cutting down and across the uterus, and rolling it up and out, and shelling out the sub-pelvi-peritoneal tumors from below upward; by doing this their cellular covering, and with it the ureter, is easily left behind and the operator may even not know that the ureteral displacement existed.

Several times when I have been forced to perform an abdominal hysterectomy without ureteral bougies I have located the ureter after liberating the bladder from the uterus and draining it toward the opposite side, by catching up the cellular tissue at the base of the broad ligament at a point just in front of the uterine artery, and pal-

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pating it between the thumb and the index-finger until I plainly felt the ureter, from this point it may then be traced forward to its vesical terminus. If it cannot be felt at once in the broad ligament it may be found first under the bladder and so traced back. The sensation conveyed by the form and consistency of the cord and its direction are quite characteristic.

The invariable rule should be made that at the close of every difficult abdominal enucleation, where the complications have been about the pelvic floor, the ureters must both be inspected and their integrity assured. This is done by seeking the ureter out at the pelvic brim under the ovarian vessels, and if there is much subperitoneal fat obscuring the ureter, slitting open the peritoneum to find them, I frequently, without inspection by touch alone, pick up the ureter at the brim and isolate it by allowing the spermatic vessels to slip between my fingers. When lifted in this way the ureter forms a prominent ridge running down into the pelvis, with a distinct, artificially formed, meso-ureter behind it. If it is then grasped at a lower point and lifted up again it may, in this way, be traced into the anterior pelvis. It may also be traced by lifting it up and pulling on it at a point just below the brim and feeling the transmitted movement in front.

Several times when there has been a good deal of tying done in the pelvis and the ureter appeared to enter a mass of ligatures and I could not be sure whether it was included in one of them or not, I have solved the difficulty by making a little longitudinal slit in the ureter near the pelvic brim and running a ureteral catheter down into the bladder. The slit was closed with two or three fine silk sutures and no harm resulted. In one instance the ureter was actually found included in the ligature embracing a large vessel, the ligature was cut and a fresh one applied to the vessels alone, and the ureter was apparently uninjured as the convalescence was normal. To avoid injuring a ureter, the cardinal rule is, never to apply mass ligatures lateral to the cervix; if the whereabouts of the ureter is not known the vessels must be tied singly. Furthermore, ligatures must never be applied at the bases of the broad ligaments in such a way as to drag the tissues in one direction or in the other for fear of making a kink in the ureter, and so obstructing it. In doing a hysterectomy for a fibroid uterus by my plan of making a continuous transverse incision, it is best, on cutting across the cervix, to cut upwards on the far side just before completing the division so as to leave a thin shell of the uterine tissue behind, in this way ex-

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posing the uterine vessels at a higher level quite out of reach of a ureter.

The ureter may be mistaken upon inspection or on palpating the lateral pelvic wall for the obturator nerve; it is also liable to be confused with the white, flat cord of the obliterated hypogastric artery. It looks most of all like a large vein from which it may be distinguished by squeezing a little blood out of the vein and noting its direction across the course of the ureter as well as by looking into its mouth and discovering the orifices of little tributary veins.

When a ureter is injured the best plan of procedure is to anastomose it at some point (ureterostomy); such an anastomosis may be made in one of the following ways:

Onto the abdominal wall—simple ureterostomy.

By joining the divided ends—uretero-ureterostomy.

By switching the cut ureter into its fellow of the opposite side—crossed ureterostomy.

By switching the upper end directly into the bladder—ureterocystostomy.

By turning it into the rectum—ureteroproctostomy, or into the colon—ureterocolostomy, or into the vagina—ureterokolpostomy.

Simple ureterostomy, uretero-ureterostomy, ureterocystostomy are the anastomotic procedures employed when a ureter is injured during an operation.

Ureteroproctostomy, and a crossed uretero-ureterostomy are deliberate procedures to be undertaken at a later date and ureterokolpostomy has hitherto been rather the result of the accidental formation of a fistula than a method of deliberate choice.

There are two factors to be considered in relation to ureterostomy, the first is what to do with a ureter divided in the course of an operation, and the second is how to heal a ureteral fistula already made.

When the ureter is divided in an operation, the general rule should be to anastomose it at once, either to its lower divided end, or into the bladder. When the division is made in the anterior part of the pelvis, it would best be anastomosed into the bladder (ureterocystostomy) by making the connection at the lower outer angle of the bladder where that organ is attached in front of the broad ligament at a point which I have named the vesical cornu. By doing this the ureter is less liable to injury than when the anastomosis is made at some indifferent point on the vault of the bladder and the

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ureter describes a free trajectory across the pelvis, putting it in a position liable to constant pressure from the viscera.

Having opened the bladder and attached the ureter at the point indicated it is now easy to draw the peritoneum together over both bladder and ureter making it extraperitoneal.

If the ureter is cut in the posterior part of the pelvis, so as to leave a long anterior end which can be lifted up and handled one of of two procedures will be available, either an end-to-end anastomosis cut straight or with oblique ends as recommended and successfully practised by Bovee, or an end-to-side anastomosis as recommended by Van Hook, and successfully put into practice by several surgeons. I think the end-to-side anastomosis is better adapted to cases in which the ureter has been dilated by pressure.

It is always worth while taking careful note of the condition of the kidney before taking the trouble to anastomose the ureter, as it has happened in several cases that there has been an entire cessation of the function of the kidney on the side of the damaged ureter, as we might expect from the displacement, compression, or adhesions involving the ureter. One of these cases was observed by Drs. Anna Fullerton and C. P. Noble, and another occurred in the practice of Karl Schroeder, and was carefully observed by J. Veit and Karl Ruge, and another was in Veit's own practice in association with a pyosalpinx.

L. N. Warkek, in the course of an ovariotomy, cut off 9 cm. of the ureter which he then brought out into the wound, as the corresponding kidney could not be found. Atrophy of the kidney had clearly been brought about by compression, as there was never any escape of fluid from it.

When the ureter has been cut off so short that it cannot be anastomosed into the bladder, and when there is a stricture below, or when any considerable portion of the ureter has been sacrificed, I have proposed to anastomose it into its fellow by drawing it across under the peritoneum above or below the pelvic brim, but I find that in this I have been anticipated by E. Casati, A. Boari (Atti del l'Acad. di Scienze med. e nat. in Ferrara, 1894), and Monaro (*Beitr. z. klin. Chir.*, Bd. XV., H. 3), as well as by Wiesinger (*Münch. med. Woch.*, Bd. XLIII., p. 1120); see Frommel, Vol. X., p. 353.

Fowler's method of anastomosing the ureter into the rectum, with an improved technique for the protection of the orifice, is well worth considering in this connection, especially if the injury happens to be on the left side.

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When the injury has not been noted at the time of operation, and an abdominal or a vaginal fistula forms, a variety of procedures come up for consideration in determining what to do; in the first place it is best to wait two or three months or sometimes even longer, until all surrounding inflammation and cellular thickening have subsided.

The rule should be made never to operate in the presence of an infection of the urinary tract on the fistulous side.

When a uretero-vaginal fistula exists and the operator has to do with the sequel of one of the various abdominal operations mentioned above in the list, one of the following courses may be resorted to, either (1) to direct the urine into the bladder by a vaginal operation, of which there are a number, or (2) to open the abdomen and free the end and turn it into the bladder, or (3) to operate through the superior strait by an extraperitoneal route and so switch the ureter into the bladder, or (4) to open the bladder through the superior strait and cut down on the ureter and suture it into the bladder (Mackenrodt), or (5) to extirpate the kidney on the affected side. The extirpation of the kidney to relieve the disagreeable effects of a uretral fistula should be reserved for cases in which there is a coincident pyelitis or pyelonephritis of that side, and in the absence of such an indication this radical procedure must henceforth be regarded as bad surgery. The immediate extirpation of the kidney at the time the ureter is injured is liable to be productive of an acute nephritis of the remaining kidney and is far more dangerous than a nephrectomy done at a later date.

When the operator has to deal with a ureteral fistula already formed and opening into the vagina, one of several procedures may prove serviceable in turning the urine again into its vesical channel. This may be done by one of several general plans, either that of Simon, which consists in the formation of a vesico-vaginal fistula at the nearest possible point to the ureteral opening and then uniting the vagina over this area on all sides so as to include the two fistulæ. The effect of this is to sequester a narrow strip at the vaginal vault which acts as a carrier of the urine from ureter to bladder; the operation is, therefore, a sort of miniature colpocleisis.

McArthur has succeeded in dissecting out the end of the ureter aud simply turning it into the bladder, and if this can be done it is the best plan of all.

Mackenrodt and Duehrssen have skilfully opened the bladder close to the ureteral orifice and slit the ureter so as to expose its mucous lining and united the two mucosæ of the ureter and the

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bladder, and then closed the vaginal wound directly over the opposed vesical and ureteral orifices. This procedure is called by Mackenrodt entropionizing.

A further alternative for these operations is the formation of a large vesico-vaginal fistula up at the vault of the vagina, followed by a circular denudation of the vagina below it, the vagina is then closed by numerous sutures uniting posterior and anterior walls. This operation is a colpocleisis, and converts the upper part of the vagina into a secondary pouch in indirect communication with the bladder through the fistulous opening. Unfortunately, the results of such a procedure are so serious that it has been universally condemned, and, as far as I know, no case has lived long after its performance. The stagnation of the urine in the vaginal pocket produces cystitis, pyelonephritis, and death. H. Fritsch, in a recent monograph, condemns colpocleisis unqualifiedly.

The vaginal operation upon a uretero-vaginal fistula may be rendered exceedingly difficult or impracticable by the extreme narrowness of the vaginal orifice, or by the amouut of scar tissue at the vaginal vault, although the latter difficulty may be done away with in part by excision of the scar (Duehrssen).

Another difficulty and objection to the vaginal mode of operating, especially in the cases where there is much scar tissue, depends upon the fact that the ureteral orifice is often extremely contracted, causing the formation of a hydro-ureter and hydronephrosis, and the end of the ureter itself may lie, not in the vault of the vagina as supposed, but some distance from the vault.

As Mackenrodt has pointed out, the ureter itself is more likely to be accessible at the vaginal vault when it has been injured in the course of a vaginal operation, and on the other hand the ureter is more liable to be at a distance from the vaginal vault when the fistula is consecutive to an abdominal operation.

One can sometimes test the accessibility of the ureter by the facility by which a sound can be introduced into it and pushed on up toward the kidney. If there is a long fine canal surrounded by scar tissue this cannot be done.

I feel it necessary, however, at this juncture, to utter an urgent warning against any reckless catheterizing of a fistulous ureter; the catheterization should only be attempted after as thorough a cleansing as possible of the vaginal vault and with a sterilized catheter. When a hydro-ureter exists the resistance to infection is reduced to a minimum, and once introduced we will have henceforth to deal no

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longer with the simple results of an obstruction, but with a ureteritis, a pyelitis, and a pyelonephritis as well. I feel the necessity of dwelling upon this danger all the more keenly as I lost one of my own cases in this way.

In the following case in which I had to do with ureterovaginal fistula of both sides, I adopted a novel plan of procedure, which has proved so successful, that I think it worth recording.

The patient, fifty-three years of age, had a carcinoma of the neck of the womb for which I performed a panhysterectomy, opening the abdomen and removing with the uterus all the pelvic cellular tissue between the pelvic walls and the cervix, and much of the paravaginal tissue, together with the pelvic glands. Before doing this, renal catheters were put into the right and left ureters respectively and left there throughout the operation.

In order to make this extensive dissection of the cellular tissue both ureters were dissected out free from all pelvic connections from the posterior part of the pelvis to the bladder, being bared to an extent of 6 cm. in their course. A large, hard gland, closely attached to the external iliac vein, was dissected out of the bifurcation of the common iliac artery; the detachment of the gland from the vein was quite difficult and it presented a distinct facet on the side of contact. Two or three more glands were also removed anteriorly to this extending along the pelvic brim toward the inguinal glands. On the right side a similarly enlarged gland was found in the same position and removed with another gland lying posterior to it. After this thorough enucleation no trace of any cancerous infiltration or metastases could be discovered in the soft tissues. From the time of the operation the patient suffered with incontinence of urine, but by the eighth day she began to have some control over her bladder and in sixteen days the examination showed that there was a ureteral fistula in the midst of the scar tissue at the vaginal vault.

Three months after the operation I attempted to cure the ureteral fistula by switching the ureter into the bladder by the abdominal route. As the fistula lay so near the median line that I could not tell from which side the urine came I catheterized the left ureter, which I supposed from the circumstances of the operation was the injured one, and found that my catheter stopped at the base of the broad ligament, at the point at which the catheter always stops when the ureter is cut off.

The abdomen was then opened and the left ureter sought out on the pelvic floor and traced up to the base of the broad ligament where it

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was rigidly held embedded in scar tissue. It was cut off at this point to anastomose it into the bladder, but on severing it, I found that the ureter had not been divided at all, but was simply stenosed by the contracting scar tissue, and narrowed down to a lumen of about 1 to 1.5 mm. in diameter. It was clear, therefore, that I had cut the ureter in its continuity and the right ureter was the one injured during the hysterectomy.

As the patient was feeble and could not stand much operating, there was nothing left for me to do but to anastomose the left ureter

Fig. 1. Showing the relation of the bladder above to the underlying vagina. The fistulous orifices of both ureters are seen in the vaginal vault; below them is seen the semicircular denudation extending across the vagina from side to side. The bladder is cut open at the vault of the vagina at a b from side to side, the ends of the incision terminating at the vaginal denudation.

into the bladder at the nearest point and to leave the fistulous ureter for another operation. This was done and the peritoneum was united on all sides over the ureter and up onto the bladder, making the operation extraperitoneal. The patient was then put to bed, but through an unfortunate oversight a drainage catheter was not put into the bladder which became distended and forced the urine out through the wound, causing urinary infiltration and infection of the surrounding tissues, accompanied by a decided febrile reaction. I relieved this by incising the left lateral vault of the vagina and freely

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opening up the base of the broad ligament, giving exit to pus, blood, and urine. Although, for a time, a little urine escaped by the bladder this soon ceased and almost all urine, from both right and left sides, passed out through the vaginal vault, and she had therefore, a double, that is, a right and a left ureteral fistula.

For the relief of this condition, she entered my private hospital, April 17, 1897. On April 27th I did the following operation, resulting in immediate and perfect relief of the condition, and she was able about a month later to leave my care and has since remained in good health without any leakage of urine and with perfect control over the bladder function.

Vaginal operation, April 27, 1897.

Vaginal outlet about 3 cm. in diameter; vagina smooth-walled, about 8 mm deep, terminating in a cul-de-sac, drawn up on either side into pockets. Between the pockets a fine, white line about 2 mm. broad, distinguishable with difficulty, representing the site of enucleation of uterus. The bladder during the past twenty-four hours has secreted 350 c.c. of urine from anastomosed left ureter.

The operation undertaken was to make a semilunar denudation two-thirds way round the vaginal wall posteriorly, beginning and ending at the lines separating the anterior from the lateral vaginal walls. In this way a denudation 6 mm. in breadth was made from side to side through tissue constantly and freely oozing.

The sutures of fine silk were then passed, about three to the cm., from one side to the other. The bladder was then opened about 2 cm. below the vault of the vagina by plunging in a right-angled knife using a sound in the bladder as a guide. It had been noticed before the operation that the entire anterior vaginal wall lay in relation to the bladder. The opening into the bladder was made transverse, 3 cm. in length, the thickness of the septum was about 12 mm. The bladder-walls bled freely and to check this bleeding the mucous lining, posteriorly, was drawn over and united to the vaginal mucosa by about seven catgut-sutures. The lines of the incision were now carried down toward the lines of denudation on either side so as to make a complete ring of denudation above which lay 2 cm. of vaginal tissue on the posterior and 2 cm. on the anterior wall, and into which opened the ureteral orifices.

The operation was now completed by carrying the sutures which had been passed on the posterior vaginal wall through the denudation on the anterior wall and into which opened the ureteral orifices at the right and left apices.

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The operation was now completed by carrying the sutures which had been passed on the posterior vaginal wall through the posterior margin of the incised bladder. This closed the vagina transversely, leaving a cul-de-sac about 5 cm. in depth.

The urine which now escaped must necessarily pass out at the vaginal vault, directly into the bladder, and out through the urethra.

The line of union was made by bringing the anterior against the posterior vaginal wall for about 1½ cm. at either side, but the middle part was united so as to bring the vesicovaginal septum in apposition to the posterior vaginal wall.

The sutures were removed on the eighth day and the union found

Fig. 2. After cutting open the bladder the upper edge of the incision a. is stitched uniting vesical to vaginal mucosa at a., while the lower edge b. is united to the vaginal denudation at c. (see Fig. 1 also), in this way intercalating the piece of the vagina, including the ureteral orifices into the floor of the bladder without forming a cul-de-sac.

perfect; there was no leakage. Complete control over bladder existed from the first. When discharged the urine contained but little pus and the general condition was greatly improved.

May 10, 1897. Removed one catgut-suture with calculus from bladder through my vesical speculum through the urethra.

The operation just described differs from a colpocleisis in that no vesico-vaginal fistula was formed and no secondary pocket was left behind for the accumulation and decomposition of the urine, on the

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other hand, the bladder was split open from side to side and pulled apart, and a strip of vaginal mucosa at the vault of the vagina, simply set into the interval between the separated halves of the bladder. On looking into the bladder through a cystoscope one would be able to see a continuous surface on all sides without any spur or pocket, while the ureters would be seen opening into the posterior vesical wall.

In the suprapubic operation we fortunately have an alternative for those cases in which the vaginal operation is impracticable as well as for those in which a uretero-abdominal fistula exists.

When the ureter is brought out on the surface of the abdomen, Rydygier has busied himself with the construction of a channel leading down into the summit of the bladder through a fistulous orifice. This has been done by Buschbeck, and Veit has successfully carried out an analogous procedure immediately after cutting the ureter.

The other alternatives, when there is a uretero-abdominal fistula, are to switch the ureter into its fellow as noted above, or best of all, to anastomose it into the bladder at the nearest point, and this may be done either by an extra- or an intraperitoneal method, or again, the abdomen may be opened and the ureter turned into the bladder and then the whole field of the operation may be made extraperitoneal by bringing together the peritoneum over the ureter and the vesical wound.

It is an important part of the technique of this operation to expose the lower end of the ureter and to divide it as far forward as possible; if it enters superficial tissue and is constricted, it should be cut off just behind the stricture. Sometimes the anastomosis is so easily effected that a considerable portion of the lax end of the ureter has been left in the bladder after slitting it up to insure a permanently large lumen.

In other cases, however, the ureter is so short when it is cut that it is only brought forward to the bladder with extreme difficulty, and if attached to the bladder there is evidently imminent danger of its pulling loose from its moorings. This difficulty may sometimes be obviated by one of several procedures, in the first place the operator will best secure the advantage of the distensibility of the elastic ureter by postponing the abdominal operation until the disappearance of all peri-ureteritis, in which the ureter is often embedded and fixed for some weeks after the original operation.

In the second place, when the ureter cannot be brought to meet the bladder, the bladder may easily be freed from its surrounding

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cellular attachments and drawn back toward the posterior part of the pelvis and so made to meet the shortened ureter, in this way securing the advantage of from 3 to 5 cm. This important procedure was first employed by myself in a ureterocystostomy, and again by Baldy, as well as by Professor O. Witzel of Bonn.

Bovee has shown also in the third place that the ureter may be lengthened by loosening the kidney and artificially displacing it

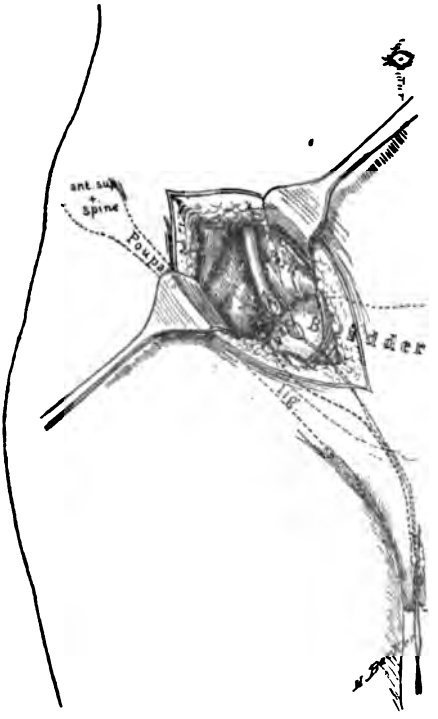

Fig. 3. Anastomosing the right ureter into the bladder by the extraperitoneal route. The unopened peritoneum lies to the median side; the ureter is slit up on its upper surface to enlarge the lumen and is then drawn by the traction threads into the opening made in the bladder at the nearest point.

downward; he has done this with success upon animals, but it remains to be tried upon the human being.

The ideal plan of ureterocystostomy is the extraperitoneal method performed without opening the peritoneum at all. This has been suggested by Fritsch in a recent monograph, and carried out, I believe, for the first time, in one of my own cases which I herewith report. The operation was surgically and technically a

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success in that the ureter healed in position in the bladder, but it was a failure from the fact that the patient died, probably of a pyelonephritis.

The fistula was in the right vaginal vault and discharged its urine through a minute orifice. A sound entered about 12 cm., but could not be introduced a second time, the position of the lower end of the ureter was therefore, uncertain. Following this examination she had a chill and fever and pain in the right loin.

On the 26th of January, 1898, I made an incision 15 cm. long from a point 2 cm. inside the right anterior superior spine of the ilium and ending near the spine of the pubis, exposing the deep epigastric vessels and the round ligament.

The peritoneum was opened inadvertently and at once closed, and then dissected loose from the right pelvic wall down to the large, thick, white ureter about 12 mm. in diameter, which was readily found and freed from its connections on the pelvic floor, and cut well forward where it began to be strictured. Both superior and middle vesical arteries were tied in order to reach the anterior end of the ureter. The uterine artery had already been obliterated in removing the uterus and the ovaries for pelvic inflammatory disease at another clinic. The bladder was then freed from its peritoneal attachments on the right side and so easily brought over the end of the ureter.

When the ureter was divided a milky fluid began to flow from the end and continued in large quantity in spite of every effort to empty both ureter and renal pelvis, as a consequence of this there was an extensive infection of the wound. The peritoneum at the pelvic floor was so adherent and thin that it tore, making an opening about 3 cm. long, which could not be closed without further tearing the delicate tissue. The ureter was then split open on the dorsum and anastomosed into the bladder, uniting mucosa to mucosa and ureteral wall to bladder wall.

On account of the widespread contamination of the tissues I determined to drain into the vagina, but unfortunately, in introducing the instrument to force the hole in the lateral vaginal wall I passed it through the capacious urethra and perforated the bladder, and inserted the gauze drain in this way, an accident which was not discovered until after the close of the operation. Another vaginal drain on the median side of the ureter was meant to protect the peritoneum from infection. The skin wound was closed. After removal of the gauze, inadvertently put in the bladder, a drainage catheter was

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inserted and all the urine came through this, and there was at no time any leakage per vaginam.

She died in six days without any tympany but constant nausea and having had a pulse which could scarcely be counted for several days.

In spite of my unhappy experience in this case I am convinced that the extraperitoneal plan is the best and I expect to follow it in future ureterocystostomies. If the urinary tract was found infected on another occasion I would either give free drainage and wait for an improvement, or extirpate the kidney. I would not again attempt to anastomose an infected ureter.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, April 7, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

Clinical Phenomena Relating to the Nervous System in Connection with Diseases of the Female Generative Organs.

BY A. F. CURRIER, M.D., New York.

(See page 130.)

DISCUSSION.

Dr. C. K. MILLS: The reader of the paper has not much discussed and advocated operative procedure in all cases that would naturally come up for consideration in a discussion of this sort. The views which I am inclined to take, and which are somewhat conservative in reference to the frequency and character of the operations which are performed in many of these cases, are held with the feeling that comes as the result of experience and not with the tendency to unduly criticize my gynæcological and surgical friends. It is now more than ten or twelve years since I began to endorse and to take part, in one way or another, in operations upon the brain or upon the cranium, in many cases where I would now fail to recommend or endorse such operations. In not a few instances I have been more or less responsible for operations which have not turned out in all respects successful.

In the first place, however, in accord with the line of discussion which would be naturally opened by the paper, I would say a word about the relations between the genital and sexual organs, and different parts of the nervous system. While undoubtedly these relations are as demonstrated here this evening, but I think sometimes that a first serious mistake is made in laying too much importance upon this question of sexual and general reflexes. While in fact very largely the nervous processes of the human body are in a more or less immediate or in a remote manner of a reflex character, we carry too far the idea of correcting the disturbances by correcting the reflex irritation. One of the sources of trouble with gynæcologists and surgeons is that which is most natural from the fact of

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specialism, namely, that they are not as fully acquainted as they should be with the conditions of the nervous system itself. They cannot be expected to be neurologists; if they were, our own vocation might be interfered with somewhat. Nor, still less, can we expect them to be psychologists; but a little psychology, such as would serve the purpose of plain doctors, and some little neurology, would often be of great value. I speak of this particularly in connection with some of the conditions which are referred to the pelvic organs, and which, judging from my own experience, are often centrally initiated—a point upon which, perhaps, sufficient stress was was not laid in the paper this evening. In regard to pain, one of the matters of chief discussion in the paper read here this evening, too little attention is paid to the fact that pain which is referred to the pelvic organs, or to organs in any part of the body, is, after all, of cerebral, or at least of central, origin. It is only necessary to refer here to the well-known facts in regard to even hallucination of pain, to emphasize this point.

In regard to the question of insanity after operation, or in connection with diseases of the pelvic organs, I would incline, with some additions, to give the same varieties of insanity that have been given here this evening. Undoubtedly we do have cases that may be regarded as purely traumatic, not being able to explain clearly, perhaps, what we mean by "traumatic," except in connection with the idea of general shock to the nervous system. We have other cases which are undoubtedly toxic, and then we have cases which are properly referred to predisposition. To these might be added cases which are actually insane—the insanity not being recognized—at the time the operations are performed. From the standpoint of the alienist and neurologist we have not a few cases of this sort. In another discussion of a similar paper I called attention to the not infrequent existence of a "monomania" of pain, as it might be called. I have, in a considerable number of instances, seen operations of a major character performed for conditions of this sort. Within a month I have seen a patient who, during as many months, had four or five operations—one upon the rectum, another for appendicitis, another for the removal of one ovary, and at least one other operation of some sort upon the uterus itself. This patient, shortly after the last operation, was in a mental condition which required her to be sent to an insane asylum under rather sensational circumstances. This woman is representative of a class of patients who are actually insane, or nearly so, without the mental derange-

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ment being recognized when the operations are performed. In a case of this kind it is a practical point to obtain the personal history and the family history of the patients. This should be closely inquired into, and the gynæcologist should have a neurologist's opinion in regard to mental disorders to assist him in making a correct diagnosis before operating.

One other word in connection with operative procedures in these cases. It is sometimes asserted as an excuse for operative procedures that insanity in some form develops in an equal number of cases from operations of other sort than those upon the pelvic organs, or that it might result in any case without regard to these operations. The important point is that this very fact should be more thoroughly inquired into.

The reader of the paper has referred to the fact that when the organs are diseased and we have nervous or mental symptoms at the time concomitant with these diseases, if we are convinced that we have diseased organs to deal with, these should be removed. I doubt whether in all cases this is a correct position to take. Certainly they should not be removed if disease is not present, except under very special circumstances, but even when it is present and when it is demonstrable, it is certainly not always good practice to remove such organs for nervous or mental symptoms because these organs are diseased.

More than this must be considered. In some cases I unhesitatingly advise operation when called into consultation by gynæcologists or surgeons, as in the case of a woman who, during the menstrual period, had mental disturbance verging at times upon insanity, whose nervous system was constantly below par, and in whose case the determining factor seemed to be the condition of extreme pain and distress at the menstrual epoch.

In regard to the existence of symptoms or the occurrence of symptoms as a result of other causes than the operation, although the symptoms come on after the operation, I have had a number of experiences. Recently I saw in the Philadelphia Hospital a patient who, after taking ether for some surgical operation, became, not insane, but developed the stigmata of grave hysteria, showing the segmental anesthesia, and some other pnenomena of this disorder. We have these grave hysterical pnenomena in a large number of cases without any operation whatever. A good rule to adopt in most cases, at least, is not to operate in cases with clearly defined symptoms of a grave hysteria in a woman, even though there be

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some, if not very marked, disease of pelvic organs. In these cases I always advise against operation, unless there is a disease of a very serious character and one which is clearly demonstrable, because my experience shows they generally turn out badly. There is a form of mental disorder which is the result of a moody concentration of of the woman in regard to the loss of her generative organs.

It would, perhaps, be well to direct a little more attention to the actual organic neural conditions in the pelvis in many cases, instead of exclusively considering the ovaries and uterus. Some years since, at a meeting of the College of Physicians, I called attention to the frequent existence of forms of sacral and lumbar neuritis in women, and also in men, for that matter, and to the necessity of treating these patients by rest and local measures, non-operative, before considering for a moment, in the case of women, operation upon the pelvic organs.

Dr. J. Madison Taylor: Preoperative and post-operative conditions, in my convictions, are often rather serious, and if the neurologists, instead of being critical of, or antagonistic to, the gynæcologists, and be ready to cooperate; if these, working in two different lines, would call each other more promptly in consultation during the preoperative conditions, there would be less of the after-operative disturbances. They look from different standpoints. In my work in neurology I have seen gynæcologists called in a great deal by neurologists, and it has been a matter of surprise to me that relatively so few neurologists are called in by gynæcologists until after the operative conditions arise which are spoken of, or, as Dr. Mills has said, where the neurologist is called in to give an opinion merely as to whether there should or should not be an operation performed. I do not think this is sufficient; there is much more to be done. We do not call one another in consultation, as a rule, at the right time. I have enjoyed in certain instances to have an opportunity of seeing a number of cases, with gynæcological colleagues, several weeks before the operation was performed, and they have told me that I was able to help them some little in elucidating certain points of importance.

Then comes the question of post-operative state. What does cure mean? These cases develop troublesome conditions and come into our hands. They are cured as far as the gynæcologist is concerned, but not cured, by any manner of means, from a neurological standpoint, of a series of conditions which make that person an inefficient member of society and sometimes a pest to her family.

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These psychoses, these disturbances of conscienceness, come our way not a little. The gynæcologist naturally thinks by these reflex relations, which have been admirably portrayed by the orator, the condition of the patient is explained. The neurologist has given up more and more attaching significance to the reflex neuroses.

Neurologists do not accept very much significance from the so-called reflex irritation from this point and from that, and while it is true that these various centers anastomose and connect here and there, so do all the centers from the teeth down to the toes, and there is intimate connection all the way through, and it does not happen that irritation of one organ involves systematic irritation of other organs, except in so far as, clinically, we are able to know that certain results happen more frequently than others. It does not transpire because connections here and there exist that results in one locality will produce certain symptoms in other localities, except in certain well-defined clinical pictures we have now and then. The psychoses and neuroses that come to neurologists are almost equal in importance with the original state.

Take the subject of the eye. It is well known that the oculist is able to cure by operation or by glassing; then, after while, these conditions come back just the same. Then are needed often a long series of procedures to bring about a condition not so bad as before, then subsequent operation or reglassing of the eye, and then, again, a fourth procedure, isolation, rest, etc. Very many times the operation is a success, and then things transpire which require a good deal more of attention and that sometimes fall our way. As to the question of psychotherapy there is a constant discussion as to whether psychotherapy is mere charlatanery or really a therapeutic measure. Wilkin says, in the *New York Medical Journal*, March 26, 1898, he believes in it firmly. It is not a question of whether we believe or not; so few men have taken the trouble to go into the question of hypnotic suggestion from a genuinely honest standpoint of inquiry that I do not wonder at the general public looking at it askance, but that a certain amount of benefit can be accomplished by psychotherapy, which can be done in no other way, can be proven by experience. I have become interested in the subject and beg my friends to send me some of their toughest cases, and I have been allowed to do what I could on these puzzling remnants. Dr. Talley sent me one such case with the confident assertion that nothing could be done. I don't suppose very much can be done for this woman, but a little can be accomplished to make her a more endurable mem-

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ber of society, and that I have succeeded in doing. For six or eight years she never smiled—was a nuisance to the family from her own admission. By direct suggestion, as well as hypnotic suggestion, I have gotten her so that she willingly comes to my office when she has come to the end of her supply of nerve-force, and I reinforce into her some wholesome views and energies. The retention of her supply of nerve-force is lengthening, and I hypnotize her and she immediately goes into a comfortable state of sweet sleep, and goes away and acts upon the suggestion I have given her for quite a space of time. Hypnotizing can be done by some individuals and cannot be done so well by others. Possibly it is because some take more pains in doing it; possibly some people are better able to humbug than others. As to whether hypnotism can do any harm in the way of moral perversion, I do not altogether know, but I do believe that it can. There are women who have a natural tendency to go to the bad, and they will go sooner or later, in more or less degree. There are others who have a tendency to keep to the good, and they go to the good. Per contra, if you confine your attention to a certain doubtful class, and they don't know whether they will go up or down, if you endeavor to reinforce their wholesome impulses, I believe you can accomplish a great deal; as to whether you can do this better by hypnotism rather than by good council I am not sure, but by hypnotism you can succeed in getting back of some door and reach some vulnerable point, to make an impression upon that sensorium or consciousness which you cannot do by straightforward suggestion, I know to be the case. Whereas, many people who are of moderate intelligence cannot take this advice directly, it must be as Moody said, in reference to being converted: "You must not only say, 'I believe on the Lord,' is not enough, but they must say it with an air of conviction and with the honesty of acceptance which is only gotten at by an attitude of faith and cooperative effort." If one can control that attitude of consciousness by hypnotic art, then it is a useful measure. I think in this country we cannot do what can be done abroad, because I do not think our people are so easily affected by it as in Europe—about Nancy, for instance, and Paris—but I believe for those individuals who are in a good deal of disturbance, mentally, you can influence them for good, and I do not believe these same individuals could be influenced by harmful direct suggestions and associations under hypnotism more than they are likely to be from hynotism.

Dr. J. M. Baldy: In one particular I differ radically with Dr.

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Currier, *viz.:* the subject brought up by both of our neurological friends. They assume for the neurologists all the virtues in this respect, but with a little looking about they will find some, at least, of the gynæcologists not far behind. In the intimate connection, as pointed out by Dr. Currier, of the nervous system of the vagina, uterus, and ovaries with the lungs, the stomach, and other organs, if irritation will cause reflex symptoms of these organs, why will not the converse be true, that disease of these organs (stomach, lungs, liver, kidneys, etc.) will cause reflex symptoms in the uterus or pelvis? I have long since, from a practical experience, been coming more and more firmly to this opinion: if one set of organs will cause reflexes, so will the others. This idea of reflexes from the pelvic organs is something we have got to unlearn. When we face the fact that the gravest kinds of disease, such as extra-uterine pregnancy, fibroid tumors, and cancer, give few or no neurotic symptoms, it seems to me we are ignoring a valuable hint on the subject. When we attempt to attribute all the reflex symptoms which are present in a given patient, who has a lacerated cervix or perineum, to a very small amount of scar-tissue, we are going very wide of the mark and are usually ignoring the more important general conditions which are producing the trouble.

Dr. A. F. Currier: I do not think it necessarily follows, from the remarks which have been made, that the theory of reflex disturbance is incorrect. At the same time I am perfectly willing to concede I did not mean to state that I accepted entirely the idea that reflex disturbance in these organs were entirely due to irritation in the genital organs. The fact remains that clinical experience has proven that we often find these conditions correlated. I think the gynæcologist has observed the fact more frequently than the neurologist, because his attention is, perhaps more frequently called to the correlation.

Now, if the symptoms in remote organs are relieved simultaneously, or nearly so, with the relief of symptoms in the genital organs, it is hardly fair to say *coincidence* when the fact is observed repeatedly. A denial places the burden of proof upon those who deny, and I am not aware that the evidence has been brought forward.

I agree most thoroughly with the neurologists that probably too many operations have been done upon women merely for the relief of nervous disease. Battey, as you all know, was an advocate of removal of the ovaries for such disease. Your own Goodell, in the

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early part of his experience, was also an advocate, though he subsequently withdrew his approval. Most gynæcologists of experience and observation are now agreed that we are seldom warranted in removing important organs from the body *merely* for the cure of nervous disease, whether real or simulated. In connection with this matter is a report, to be published with my paper, of two distinguished Italian alienists, based on operations upon women who were either the subjects of hysteria or allied conditions, or who were mentally unsound, their conclusions, from 115 operations performed in Italian hospitals and asylums, being that the results did not usually justify such operations.

In regard to the question which was raised by Dr. Mills, which was a very important one, of operations upon those who were insane, I did not introduce the subject into the paper, although it naturally came under consideration when the paper was in the course of preparation, because it seemed to me it would unjustifiably prolong it. My intention, more particularly, was to consider those apparently allied conditions which obtain prior to the treatment by the gynæcologist, whether that treatment be by local applications, or by operations upon organs, or what not. I may say, however, that I agree with the position of Rohé, who has probably had more experience in the matter than any other alienist in this country, since he combines the gynæcologist and the neurologist, that if an insane woman has gross lesions of her genital organs she has as much right to be treated for them and relieved of them as the woman who is not insane. The position of Dr. Mills may be correct, that a lesion of the genital organs is not necessarily a cause for operation, but I failed to hear him state the limit of lesion before he would consider an operation justifiable.

The preoperative consideration of cases, with more careful and thorough analysis, as suggested by Dr. Taylor, is to be commended. If cases were studied from more than one standpoint before determining the line of treatment, it would probably be better for the patient. I am very sure that gynæcologists are not the only ones who sin in this particular. I presume there is not a gynæcologist of experience who has not been consulted by those who have been to one neurologist after another, and have finally come to him for relief. All this is simply an evidence that we have not reached the bottom and that we still have something to learn from both sides of the question.

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Ureteral Anastomosis.

By Howard A. Kelly, M.D.

(See page 145.)

Discussion.

Dr. J. M. Baldy: One of the practical points of the whole question of urethral instrumentation has been an improvement of general abdominal technic in regard to operations. We all of us have had injuries to the ureter, and all of us have seen probably more that came from the hands of other operators. The difficult ones are not those which occur at the time of operation—these are comparatively simple. The day is past in which the removal of the kidney is longer indicated for injury of the ureter. The methods of repair have called our attention to the methods of avoidance. Intraligamentary tumors, either solid of uterus, or cystic of ovaries, have been responsible for a large proportion of these ureteral injuries. If both sides have to be sacrificed the procedure is exceedingly simple. Dr. Kelly called attention to this procedure for solid growths; it is just as simple, easy, and as feasible in intraligamentous cystic growth.

As to the class of cases in which ureteral injuries occur, Dr. Kelly included in his list several instances which did not seem to me to to belong to the legitimate class. We may have an injury to the ureters in extra-uterine pregnancies of three or four months, but that such an injury to the ureter should occur is an accident in surgery and not inherent to this operation. The same may be said in regard to Porro's operation.

The repair is very simple, if one has a little mechanical ingenuity, where the injury occurs in our own hands, and occurs primarily. It becomes exceedingly serious if the patient is allowed to go to bed and the ends of the organs are involved in cicatricial tissues. Sometimes in some cases it has rendered future operations futile. Possibly it would not have been so if operated on at once. The plan of shifting one ureter across to the other, provided the ureter is long enough to carry to the opposite side, is a good one. At a certain point this is feasible, but if the ureter is cut above the brim of the pelvis—cut too high up—I conceive a case could be extremely difficult to get across to the opposite ureter. The end-to-end anastomosis, the question of bladder implantation, the question of lateral anastomosis is one purely to be studied by the case as it occurs at

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the time. There is no rule for the surgeon to follow in these cases, except that of common sense, as to the best and most feasible plan. In the majority of cases bladder-implantation is most feasible. It is a practical fact that in all reported cases in which any comment was made as to the feasibility of bladder-implantation, it was clear that anastomosis could not have been performed on account of the condition of the two ends. As a matter of fact, most of these injuries are in the posterior pelvis and at the lower portion of the posterior pelvis. As a rule, when adherent or infiltrated, as in cases of cancer, it leaves the ureter so impeded as to make it impossible to get at it to make an end-to-end attachment. Sometimes the ends of the ureter cannot be brought together, except by dissecting the bladder and bringing bladder to ureter rather than ureter to bladder.

Some years ago I resorted to pretty much this same method of procedure. I brought the bladder and ureter together and made implantation when it became very evident that the union would not hold. I simply took my knife, cut the ligaments attaching the bladder to the pelvis, and dropped it back into the pelvis sufficient to take all tension off the stitches. Dr. Kelly has explained very plainly the various procedures and principles on which these conditions must be met if success is to be obtained when the fistula occurs in the vagina, and no rule can be applied to any given class of cases. The surgeon must need apply principles as he can apply them at the time. The principles, as laid down by Dr. Kelly, are so plain and correct that it is unnecessary to make any further comment on them.

Dr. FULLERTON: My own experience in ureterostomy is limited to two cases. The first of these was performed during an operation for the removal of a large intraligamentary cyst, complicated by dense adhesions and general involvement of all the pelvic organs in malignant disease. Dr. Noble assisted me with the operation and and it is referred to by Dr. Kelly in his recently issued work on operative gynæcology. The cyst was successfully peeled out of the broad ligament, but in the separation of adhesions the left ureter was divided. As the patient was in no condition for further operative procedure at the time, I acted upon Dr. Noble's suggestion and fastened the distal extremity of the divided ureter into the abdominal wound. A long, flexible, ureteral catheter was carried into the ureter in order that the urine voided from it might be carried to a safe distance from the wound. As there was no discharge from the catheter at any time, it was concluded that the kidney had been atrophied by pressure. The patient survived the operation four

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months, when she succumbed to the progress of the malignant disease. The second case—one reported by myself to this Society in October last—was a ureterocystotomy, necessitated by the accidental division of a ureter during the enucleation of densely adherent pus-tubes and ovarian abscesses. The ureter was a double ureter and was severed low enough down in the pelvis to make it possible to implant its distal extremity in the upper part of the bladder.

The practice of catheterizing the ureters before operation in order to avoid wounding them, as recommended by Dr. Kelly, does not seem to me altogether feasible. The maneuver is a difficult on at the best in uncomplicated conditions, and when we have large tumors which, in their development, have rendered the ureters more tortuous, it seems somewhat of a risk to catheterize. I have hesitated to prolong any operative procedure of my own by a resort to this method. In two cases occurring in the service of Dr. Roberts at the Woman's Hospital, I was enabled to discover the cause of severe attacks of renal pain by catheterization of the ureters, leading subsequently to successful operative procedures. In one of these, obstruction of the ureter was found to be due to a large, impacted calculus; in the other, to an atrophied kidney, with perinephritic adhesions and probably kinking of the ureter. In some other cases of tuberculous kidney and pyuria I have found ureteral catheterization an aid to diagnosis.

Dr. Kelly's suggestion of freeing the bladder from its attachments in order to make it meet a divided ureter appears to me a valuable one.

Dr. C. P. Noble: What is to be done with the abdominal vessel as to the relation of the ureter when the ureter is cut off high up? It seems a practical difficulty in carrying out this operation, that the ureter would be dragged across the large abdominal vessels.

Official Transactions.

Frank W. Talley, *Secretary.*

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, May 5, 1898.

The *Vice-President*, H. M. FISHER, M.D., in the Chair.

Two Cases of Tubal Pregnancy.

Dr. GEORGE M. BOYD: I have two specimens of some interest—specimens of tubal pregnancy—demonstrating somewhat the difficulty of diagnosis and of interest also in reference to the method of operating in this class of cases.

The specimens have been kept in formalin solution and have changed materially in character since the operation. The first specimen is from a patient, Mrs. S., 27, married eleven months; the early history is uneventful, she had the usual diseases of childhood, and menstruation began at the seventeenth year, was irregular, and painful periods, ceasing for some months before reaching the age of 22. At the twenty-fourth year she had great pain and soreness over the ovarian region, lasting eight weeks; she was confined to bed two weeks, and discharged pus from vagina; condition pronounced inflammatory. She was admitted to the hospital in February (the 7th), with a history of having had a possible fibroid tumor.

In December, two months prior to her admission to the Lying-In Charity, she was taken with a pain and hemorrhage, the symptoms of ruptured tubal pregnancy, and remained in bed, one day better, the next worse, and her condition becoming more and more grave, until finally she was sent to the Charity with the above diagnosis. The patient upon admission to the hospital was in an extremely weak and exhausted condition, and upon internal examination the pelvis was found to be filled with an inflammatory mass, the cervix was high up against the pubis and posterior to the cervix, a mass was felt bulging to the vagina, extending to the right side of pelvis about the size of third month of pregnancy. The patient was septic. Because of our inability to get a clear history of the case the diagnosis was reserved to the time of operation.

The patient was operated on one week after admission to the hospital. In the meantime she had an elevation of temperature, and at

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the operation revealed an old tubal pregnancy, the pelvis filled up with extensive adhesions and the right tube very much enlarged, the seat of an ectopic gestation. After breaking up extensive adhesions, the right Fallopian tube was removed. In addition to this upon the opposite side, filling up the pelvis, was found a large, partly organized, and encapsulated clot. The adhesions were extensive, and with the breaking of them there followed considerable oozing. This was finally checked, a drainage-tube was placed, and the wound closed. Twenty-four hours after the operation the drainage-tube was removed and the patient finally made a complete recovery. The examination of the specimen showed that it was the usual form of ectopic tubal pregnancy, the Bland-Sutton tubal abortion.

The second case presents about the same history. She was admitted one week after the first case, and the history is as follows: Mrs. C., 28, a multipara, was admitted to the Lying-In Charity February 15th. This patient, for two months prior to her admission to the hospital, had been ill under the care of a physician, with a not clear history of ectopic gestation.

Upon admission to the hospital eight weeks after primary rupture of tube, it was found that she was septic. She had elevation of temperature; the pelvis on internal examination was found to be filled generally with an inflammatory mass, the uterus and the whole lower pelvis, everything, was matted together by inflammatory adhesions. This patient was operated upon two or three days after her admission to the hospital. On opening the abdomen free hemorrhage with extensive adhesions were present. The omentum was bound down firmly; it was necessary to break up these adhesions, and after freeing the omentum the small intestine was found to be adherent to the mass occupying the pelvis; after a careful dissection the intestinal adhesions were broken up. Finally, after an extensive dissection, difficult to make because of the extent of the inflammation, the right tube was liberated, it was found enormously distended and enlarged. In this second case we also found a large, partly organized clot. The one case resembled the other in many respects.

I have presented these specimens chiefly for the purpose of bringing out, if possible, a discussion of the means or method of diagnosing late tubal abortion and the best method of operating in these cases.

Tubal pregnancy can be diagnosed with comparative ease if the case present itself early, or about the time of rupture, but when the cases are seen late, two or three months after the primary rupture,

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the diagnosis is often difficult. The important symptom at the time of rupture is intense pain in the region of one or other ovary and hemorrhage, which may be more or less extensive. Cases in which the primary rupture is not accompanied with hemorrhage sufficient to cause death we find later present a variety of local symptoms dependent upon the extent of hemorrhage and presence of blood-clots which Nature is attempting to absorb. If the hemorrhage is only slight it will be in time probably completely absorbed, but when it is greater in amount it is more of a task for Nature to accomplish, and after absorption of the blood-serum we find left large coagula which undergo various changes. First, Nature attempts to shut off the blood-clot from the general peritoneal cavity and then attempts the excapsulating of the mass. With this we find that in some cases the clot becomes organized more and more, reducing its size and giving rise also to symptoms of pressure, of vesical irritation and bowel constipation, and difficulty in defecation, or else in certain cases we find the cloths become disorganized and the patient becoming septic. While pain is the most reliable symptom in early tubal pregnancy, in those cases seen two or three months after rupture, the most constant symptom seems to be a slight continuous bleeding resembling very much the hemorrhage we have in incomplete abortion.

I have reported these cases briefly, hoping to bringing out a discussion on *First*, as to the best method and the difficulty of diagnosing ectopic gestation; and *Second*, the best method of operating in these cases. In the late cases it seems to me it is impossible to attack the trouble from the vagina. In both of these cases an operation per vaginam would have only resulted in an incomplete procedure.

Discussion.

Dr. R. C. Norris: I can scarcely add anything to what Dr. Boyd has said, but in response to your invitation to open the discussion, will remark that so far as the diagnosis of tubal pregnancy is concerned, there are two symptoms I find in some cases that Dr. Boyd did not mention: one is the evidence of pressure as shown by pain along the thigh, which I have found quite a constant symptom in some cases, and the other is an elevation of temperature, a moderate fever, doubtless due to attempt at absorption of the effused blood in the peritoneal cavity. One case I recall to mind where the diagnosis was somewhat difficult, a case in which a woman had an early

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abortion coincident with a tubal pregnancy. I think sometimes it is also absolutely impossible to make a differential diagnosis between tubal pregnancy and abortion in consequence of pyosalpinx. When we come to actually making a diagnosis, oftentimes, with a mental reservation in favor of extra-uterine pregnancy, the abdomen is opened and we are confronted with pyosalpinx. Fortunately, as every operator knows, the actual diagnosis is not of such great importance, since the treatment in either case would be the same, so far as treatment is concerned, as to whether the abdominal or the vaginal route is to be selected. I believe the abdominal route will in all cases be the preferable route, except in cases of large hematocele that may have remained a long time after rupture, when simple puncture of the vaginal wall and drainage will be sufficient. To operate by the vagina at an early period will sometimes court difficulty and danger. During my recent vacation I had an opportunity to see a vaginal operation for a relatively recent case of extra-uterine pregnancy, which turned out to be such a case as the one Dr. Boyd refers to, that is, tubal abortion. The operator made his diagnosis, discoursed at length upon the great advantage of the vaginal route in such cases and the great ease one has to conserve the sound ovary and tube, and the short rest in bed which would follow the vaginal operation. The anterior cul-de-sac was opened, the tube and ovary of the side involved was enucleated, ligated, and removed. During the manipulation sufficient force had been used to tear the broad ligament at some point not controlled by the ligature, furious hemorrhage ensued, compelling the operator to complete the operation by hysterectomy, which destroyed the uterus as well as both tubes and ovaries. Unless a man is a very expert vaginal operator it seems to me that the abdominal route will always be desirable. I can only say in conclusion that the diagnosis will oftentimes be obscure, oftentimes uncertain, and unless a man has a wide experience in operating by the vaginal route, I should think the abdominal route preferable.

Dr. G. I. McKelway: As to the diagnosis of ruptured tubal pregnancy some days after rupture, excepting from the history, I don't believe it is possible in the majority of cases. Examination reveals a mass in the pelvis, just what that mass is, excepting from the history, no man can tell. A member of this Society, who has said more things, wise and otherwise, than any other member of it, was asked once in a case what he was going to find when he opened the abdomen, he said, "One of fourteen things," and I think in our

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cases of ruptured tubal pregnancy, in which the rupture has occurred some long time before, unless we have a clear history and base our diagnosis largely upon that history, we are not able to diagnosticate precisely the condition. And it does not always do to be led by the history. I saw a lady in my office yesterday, a young unmarried girl who, while visiting a sister in the South, was one day during a menstrual period seized with sudden pain, fell to the floor, complained of great agony on the right side low down, was faint, nauseated, with many of the symptoms of shock, and was in bed for some days. She then had another attack quite similar to the first. The physician who saw her was not a surgeon, and simply prescribed palliative measures for her pain. Afterward she saw a surgeon who made a rectal examination and found a large mass filling up the pelvis. He opened through the vagina and evacuated a large quantity, not of blood, but of pus, washed out and packed the cavity and after some months of washing and packing, the girl became sufficiently well to come home. In my belief she had appendicitis, first, with a sudden attack, and second with rupture and formation of pus, which was evacuated through the vaginal incision. Her tubes and ovaries had nothing to do with her condition. They were not disturbed and were and are normal and healthy.

I had a case of ruptured tubal pregnancy a few weeks ago of much interest. An insane woman was sent to me to have her cervix repaired. Very little was known of her history, except that she had not been living with her husband for four months, that during that time she had been in an apathetic, melancholic condition, speaking to nobody, and part of it had been subjected to forced feeding, etc. In the hope that the repair of her cervix would be of help to her she had been sent to me by her physician.

On examination I found a large mass in the pelvis. Instead of repairing her cervix, which was but very triflingly lacerated, I opened her abdomen and removed the specimen which I show you to-night. I found a large, dense mass held in by a wall of exudate, just such a condition as you would expect to find in an old pyosalpinx. I broke through the wall and instead of finding a collection of pus, found clear fluid, and, floating free in it, this sac, which was about the size of a hickory nut and contained this exceedingly small ovum, which is about the size of a grain of pop-corn. On the plate one is able to make out positively that it is an ovum, otherwise one would scarcely believe the identity of a specimen so small. The case had been a ruptured tubal pregnancy, and precisely the same change

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had taken place, probably, in the liquid in the pelvis that takes place when a pyosalpinx becomes a hydrosalpinx. Bland Sutton states that hydrosalpinx is a condition secondary to pyosalpinx. I believe the clear fluid was the liquor puris of an old pus collection in the pelvis, resulting from a neglected ruptured tubal pregnancy which must have occurred some months before.

Dr. BENJAMIN: The difficulty of diagnosis in these cases was well illustrated in a case that was sent to me by some of my professional brethren (who are good diagnosticians) to be operated upon for tubal pregnancy. The symptoms were such as would characterize a case of tubal pregnancy that had burst, probably in the third month. A mass was found in the region of the left Fallopian tube. The pain had been quite severe. On making an abdominal section I found an *appendicitis*, a long appendix extending clear down, had opened at the end and set up inflammation, and was adherent to the ovary, great inflammation had taken place in the right side of the pelvis, and in addition there was an old pyosalpinx. The tube and ovary was removed on that side and the appendix removed close to the cæcum. The patient made a good recovery. In that case an attempt to operate by the vagina would certainly have resulted in failure to cure the patient.

Dr. JOHN C. DACOSTA: Dr. Norris has spoken so clearly about the dangers of the vaginal route in cases of extra-uterine pregnancy that little or nothing can be added to it. Dr. Boyd was kind enough to ask me to see this second case that he quoted. He had spoken to me about it before he operated, and we came to the conclusion that it was probably a case of extra-uterine pregnancy. The operation was such that if he had attempted to remove it by the vagina he would have had a dead woman before he could have got the mass away, there were adhesions, masses of blood, everything was adherent. When they talk of operation by the vaginal route for extra-uterine pregnancy, and we hear of leaking of blood-vessels, and the abdomen having to be opened to finish operation; when we consider how important these blood-vessels are in pregnancy, whether uterine or extra-uterine, how liable they are to tear or bleed, I think a man takes a great risk when he attempts to remove extra-uterine pregnancy by vagina. An old Scotch surgeon's saying comes to my mind, when his assistant put his fingers over the spurting blood-vessel, "Take your fingers away, mon, until I see where the blood comes from," so you want to do in an extra-uterine pregnancy, if you don't know where the blood is coming from. I do not know anything

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more difficult to make surely than the diagnosis of extra-uterine pregnancy in the first two or three months. Scarcely any operator but has been deceived again and again. I was called in consultation last week by a man who is an expert operator (I imagine he has done 150 to 200 coeliotomies), who asked me to see a case and say whether it was an extra-uterine pregnancy. That woman's menstruation had been perfectly regular until December, then menstruation stopped, and about the 1st of March irregular bleeding began. There was a steadily growing mass in the pelvis. This woman told me that she had had a short time before this intense pelvic pain, there you have the three classical symptoms, the stoppage of menstruation, irregular bleeding, gradually growing mass in pelvis and paroxysmal pain. I still felt doubt as to extra-uterine pregnancy, and two days afterward we opened the woman and found a cyst.

She had those very pains Dr. Norris spoke of running down the leg, and yet there were no adhesions. That is one instance of how we may make a mistake. I am sure, however, the President has many a time opened for tubal pregnancy and found pyosalpinx, and vice versa, has opened for pyosalpinx and found tubal pregnancy. I do not know whether he will recall a case we had at the Jefferson some years since, the woman had symptoms of pyosalpinx, we found tube on right side apparently perfect, broad ligament in good condition, the ovary had disappeared, and where the ovary had been, at the end of the tube and grasped by the fimbriated extremity of the tube was a blood-clot, nearly as big as my fist and right in the middle of it was the fœtus sitting up.

Dr. L. J. Hammond: From the experience I have had in diagnosticating extra-uterine pregnancy I would feel it unwise to elect vaginal route. Certainly in two of my cases, in the first a large part of the pelvis on the right side was filled with islands of partly detached placental tissue which were bleeding, and had I opened through the vagina I would simply have liberated the clots and added much toward profuse hemorrhage that would not have been detected until much loss of blood had taken place.

The second case was one very like it. Both of these have been reported, and illustrate clearly the importance of having plenty of room to see and deal with the condition of hemorrhage which always is to be looked for in these cases if advanced beyond the third month or earlier if rupture has taken place.

Official transactions.

Frank W. Talley, *Secretary.*

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ON THE RELATION OF THE GREAT NEUROSES TO PELVIC DISEASE.*

By F. X. Dercum, M.D.,
Clinical Professor of Diseases of the Nervous System, Jefferson Medical College, Philadelphia; Neurologist to the Philadelphia Hospital.

The relation of nervous and mental affections to organic disease is a most interesting subject, and one which has been the cause of repeated discussion. Much confusion exists in the minds of general practitioners and also, I fear, in the minds of surgeons with regard to the common nervous affections met with in daily practice. The reason is to be sought for in the fact that men who are busy in general practice, or in their chosen special field of surgery, find it difficult, if not impossible, to keep in touch with the progress made in other departments, such as neurology. Gynæcologists naturally view the troubles from which women suffer from the standpoint of the surgeon. It is fitting, therefore, that I approach the subject to-day from the standpoint of the neurologist and first direct your attention to the essential facts presented by the great neuroses. I employ the term, the great neuroses, for those two exceedingly common affections, neurasthenia and hysteria—affections, by the way, which are almost as frequent in the male sex as in the female, and may exist uncomplicated by any pelvic or other organic disease. I will consider them briefly in turn. First let us take up neurasthenia.

Too often the physician turns aside from the subject of neurasthenia as uninteresting, as being a term applied to a condition rather than a disease, and as presenting symptoms that are vague and ill-defined, and from a study of which nothing definite can be gained. In reality, neurasthenia is an exceedingly interesting affection; one which, far from presenting a vague and ill-defined symptomatology, presents a symptom group which is as fixed and as definite as any disease with which we are acquainted. It is true that now and then the symptoms differ widely in detail, but they always present the same essential features. They are always expressive of fatigue, and I have, therefore, myself proposed for neurasthenia, the far more expressive name of the fatigue neurosis. The stamp of fatigue is

* Read. For *Discussion*, see page 194.

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ineffaceably fixed upon every case. Every symptom is expressive of weakness, of irritability, and of ready exhaustion. A brief glance at the clinical picture will bear this statement out.

The symptoms resolve themselves into sensory, motor, general somatic and psychic disturbances. Beginning with the sensory disturbances, we have, first, a general sense of fatigue or tire. This may be diffused throughout the entire body, but is generally accentuated in special regions, *e. g.*, the head, the back, or the limbs. It is characteristic of this sense of fatigue that, in the simple and typical cases, it is brought on, if absent, or made worse, if present, by effort. It is expressive of diminished power for the sustained expenditure of energy and it is to be looked upon as one of the primary symptoms of neurasthenia. If the conditions causing this general sense of tire persist, the sensation ceases to be merely one of fatigue and becomes one of pain. In other words, when fatigue sensations become exaggerated, they become painful, and they are then described by the patient as aches of various kinds and are referred to special regions. Very commonly, for instance, the patient complains of headache. When present in a mild degree, this headache is described as a dull feeling or a dull aching, and is then relieved by the mere cessation of work or by rest. When it is more pronounced, it is referred to the occiput, to the vertex, or to the brow and may be associated with sensation of pressure or constriction about the occiput or temples, or with giddiness, or with ringing in the ears. No matter in what situation it is most pronounced, or how accompanied, it is always expressive of fatigue. Next in frequency, patients complain of backache. This at first may consist of a simple feeling of fatigue referred to the lumbar region and which is relieved by lying down, but which later may become so exaggerated as to make backache the most prominent feature of the case. The same is also true of fatigue sensations referred to the limbs. These may become so exaggerated as to make aching in an arm or in the legs the one symptom which leads the patient to seek medical advice.

When we turn our attention to the phenomena presented by the visual disturbances of neurasthenia, we find that they are also expressive of fatigue. I will not stop to analyze these phenomena as this would be too great a departure from the legitimate field of our discussion. I will merely pause to say that the symptoms are those of ready exhaustion and are referable to fatigue of the accommodative apparatus, the retina and the cerebral centers. One of the most common statements which we meet with in neurasthenics is that

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they cannot read for more than a few minutes at a time; that the letters become blurred and that the effort gives rise to pain, generally headache, or to other cephalic distress, such as vertigo. If time permitted, I would point out to you that similar truths obtain with regard to the other special senses.

When we turn to the motor symptoms we find that these also are expressive of fatigue. They consist more especially of muscular weakness which develops rapidly under exertion, of tremor and various modifications of the tendon reactions. The time at our disposal is entirely too short to consider the visceral and general somatic disturbances. These I have fully considered elsewhere. Suffice it to say, thát the disturbances or circulation, of digestion, of secretion, and of the sexual functions, are all of them manifestations of fatigue. For instance the primary fatigue symptom referable to the digestive tract is that of a digestion delayed and enfeebled, an atonic indigestion both gastric and intestinal. The disturbances of circulation are manifested by feebleness of the pulse, coldness of the extremities, disturbances in the rhythm of the heart's action, and even by heart murmurs. The disturbances of secretion are manifested by change in the character and quantity of the perspiration, of the urine and of the saliva which again are also purely and solely related to fatigue. When we turn our attention to the psychic disturbances, we find that they also are expressive of fatigue. A marked and characteristic symptom, namely a diminution of the capacity for sustained intellectual efforts is invariably present. As the patient is incapable of long-continued physical labor, so is he or she incapable of long-continued mental labor. The attempt to do mental labor, sooner or later brings on symptoms of exhaustion, and if the task be persisted in, marked fatigue sensations make their appearance, especially headache. Associated with the lack of power for sustained effort, there is also the lack of power of concentrating the attention, and this the patient frequently mistakes for loss of memory. In addition to these symptoms, there is a lack of spontaneity of thought and a diminution in the strength of the will, a condition of general indecision, and mental and emotional irritability. Frequently, fear also is present, and may assume a general or a special form.

The symptoms that we have thus far detailed are those which I have termed in my writings the primary symptoms of neurasthenia, and they are always expressive of chronic fatigue. If we pause to analyze any one of these primary symptoms we will find that there

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is present as the essential condition not only a marked and persistent diminution of nervous energy, but also an increased reaction, mental and physical, to external impressions. In other words, to nervous weakness there is of necessity joined nervous irritability. Diminished resistance to fatigue implies diminished resistance to impression from without; weakness and irritability are thus necessarily associated. This is seen, for instance, in the motor symptoms where muscular weakness is associated with increased reflex excitability, and in many of the sensory symptoms, where, to the fatigue sensations, there are sooner or later added the symptoms of local hyperasthesia. Thus, hyperasthesia, often painful in character, is found over the spinous processes, over the coccyx, or over various other areas. Another illustration of the same general truth is found in the fatigue of the eye; here the patient is not only unable to use the eyes persistently, but there is also present, sooner or later, painful hyperesthesia and irritability of the eye to light, so that neurasthenics often begin to wear smoked glasses of their own accord. It is this increased reaction to impressions from without that is of striking importance, as we will presently see, when we deal with organic affection occurring in neurasthenic subjects.

To discuss the symptomatology of neurasthenia fully, would encroach too much upon the time allotted to this paper, but let me say in passing that there are present in addition to the symptoms I have mentioned as primary, other symptoms to which I have given the name secondary, or adventitious symptoms. To illustrate what I mean by a secondary or adventitious symptom, let me point out that it is very common, for instance, to find associated with the headache of a neurasthenia, other symptoms, such as sensations of pressure or constriction, of fulness, of heaviness, or of throbbing of the head. Often sensations are present which the patient cannot properly describe. It is extremely probable that these curious sensations are, many of them, if not all, the result of various intracranial circulatory disturbances and are not directly fatigue sensations. It is for this reason that I have termed them secondary or adventitious. Time will not permit me to pursue this parallel into the other symptom-groups of neurasthenia more than to merely mention a few of them. Thus, among the motor symptoms, tremor, spasmodic jerking, fasicular contractions are not of themselves fatigue symptoms but are mere secondary outgrowths. Among the sensory symptoms, numbness, pins-and-needles sensations, velvety feelings, subjective sense of heat and cold are secondary symptoms. Among the visual dis-

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turbances secondary symptoms are generally indicated by such statements of the patient as, that objects look unnatural, that things look misty; or as though objects were looked at through a veil; or that everything looks dull or bright; that near objects look far away, or that they look excessively small or excessively large. These symptoms are evidently not fatigue symptoms but are clearly secondary or adventitious. Among the disorders of hearing, one of the most common adventitious symptom that we meet with is tinnitus, which is variously described as buzzing, whistling, roaring, or ringing.

I mention these various adventitious symptoms to-night merely because they sometimes obscure to the superficial observer by their prominence the primary or essential symptoms. To briefly re-state the facts, let me say first that by neurasthenia is meant the fatigue neurosis; secondly, that the two cardinal conditions of the fatigue neurosis are persistent nervous weakness, together with increased nervous irritability, that is, increased reaction of the organism to impressions from without. When we apply this interpretation of neurasthenia to the study of the diseases of the various special organs we find at once that a ready explanation is presented for many of the strange facts we meet with. How remarkable it is that an eye defect often remains undiscovered for years. A man who has become neurasthenic finds that exertion of the eyes brings on headache or makes headache worse, if present, because his resistance to fatigue has been diminished. In other words, an exertion so slight as to be utterly inadequate to evoke any symptoms whatever in a healthy man, may in a neurasthenic rapidly bring on a fatigue headache. In the same way a local defect or disease in other portions of the body may remain undiscovered as long as the general health remains good, and may only make itself felt when neurasthenia becomes established, *i. e.*, when the nervous system presents the phenomenon of increased or abnormal reaction to local impressions. This fact has especial application to gynæcology. It is well known that a woman with a laceration of the cervix or perineum, a displacement, or possibly a prolapsus of the ovary may make no complaint as long as her general health remains good; not infrequently she fails to seek medical advice for the pelvic condition until neurasthenia has become established.

Without pausing to apply these considerations to the problems of pelvic surgery at this point of our discussion, let me briefly direct your attention to the conditions that I term collectively neurasthenia symptomatica or spurious neurasthenia. Grave visceral disease is,

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of course, associated with general bodily weakness, and this general bodily weakness is too frequently mistaken for true neurasthenia. Serious local or general disease weakens the entire organism, and with it the nervous system, and that various signs of nervous weakness should be present under such conditions is but natural. The symptoms present, however, never form that symptom-complex which characterizes the fatigue neurosis. Neurasthenia symptomatica is seen more especially in phthisis, in syphilis, in chlorosis, in the various anemias, in the toxemias due to infection or metallic poisoning, and in other grave disturbances of nutrition. It is important also to remember that it is also seen associated with the various insanities, and often constitutes the only feature presented by the prodromal periods of these affections. This last-mentioned fact is of the utmost importance, especially as patients in the prodromal periods of the psychoses are prone to be hypochondriacal, and to complain of various visceral ills. I have met with several instances in which the patients willingly accepted the explanation that their illness was due to pelvic trouble, and submitted to operation, while the subsequent history of the case was that of a developing and finally mature insanity, running its inevitable course.

With this brief allusion to the subject of neurasthenia symptomatica, let us pass to the considerations of the second of the great neuroses.

The second of the great neuroses is hysteria, or as I prefer to term it, the psycho-neuroses. I know of no affection concerning which there is still so great a lack of knowledge in this country and England, notwithstanding the fact that the French, and later the Germans, have unmistakably defined and described the symptomatology of the disease. We frequently hear it stated and almost as frequently see it printed, that hysteria is a disease without a syndrome; that it is a disease which presents an "infinitude of shifting polymorphic nervous disturbances." This last phrase I borrow from a text-book on the practice of medicine, published in this country not later than 1897, and nothing could be more untrue. In reality, hysteria presents a syndrome that is as fixed and as definite as that of any other disease with which we are acquainted. Like neurasthenia its cardinal symptoms are always present and always characteristic, while it is equally true that other symptoms, secondary in importance, are from time to time added, though the number of the secondary symptoms is far less than those met with in neurasthenia. I term hysteria the psycho-neurosis because the physical symptoms

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present in it are dominated by mental phenomena, themselves the result of a genuine and profound affection of the cerebral centers. Prominent, for instance, are emotional disturbances and modifications of the will, but to these are added physical signs so striking that they can never be misunderstood. The symptoms of hysteria, like those of neurasthenia, consist of sensory, motor, general somatic and psychic disorders. Let us begin with the sensory symptoms. In neurasthenia the sensory symptoms consist for the most part of fatigue sensations combined with symptoms of sensory irritability. In hysteria, on the other hand, fatigue sensations are absent, but instead there may be present true anesthesia, complete or partial; in other words, we are at once impressed with the fact of true sensory loss which never occurs in neurasthenia. Further, this sensory loss or anesthesia is so characteristic as to enable us frequently to make a diagnosis of hysteria from it alone. I need only allude to the condition of hemianesthesia, in which anesthesia is confined to one-half of the trunk, head, and limbs of one side. Strange to say, this sensory loss involves most frequently the left side. Again, the loss of sensation may be less widely distributed, and then it is frequently characterized by peculiarities of location; for instance, it may be confined to a segment of a limb, that is, it may extend from the elbow to the wrist, or from the knee to the ankle, and is then termed segmental anesthesia; again, it may cover the fingers, hand, wrist, and arm up to a certain level like a glove, and is then spoken of as glove-like anesthesia; or it may cover the foot, ankle, and leg up to a certain level, and then is spoken of as stocking-like anesthesia. At other times it assumes curious geometrical or irregular shapes. The fact which strikes the observer at once is the absence of correspondence of the various hysterical anesthesias to any nerve distribution or to any sensory representation in the spinal cord. This fact naturally refers us, in seeking for the seat of the disturbance, to the cerebrum. As regards hemianesthesia this is further rendered probable by what we know of the pathology of organic hemianesthesia, and it becomes still more probable when we reflect that the facts at our disposal lead us to infer that the representation of the limbs in the cortex is by segments. To sum up, therefore, in hysteria it is the distribution of the sensory loss which is characteristic and which at once stamps it as hysterical. An important fact, however, should in this connection be borne in mind, and that is that the sensory losses in hysteria are most frequently far from being complete. Indeed, the most frequent condition that we find is that of *diminution* of response to tac-

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tile, to pain, and to thermal impressions, there being present under these conditions merely a general lessening of sensation, a hypo-esthesia, or hypesthesia as it is termed technically. Partial sensory losses, therefore, having the peculiar distribution which I have stated, are as unmistakable in their significance as total sensory losses which are less frequently met with.

Far more important, however, than anesthesia or hyperesthesia is the hyperesthesia which is found in hysteria. This also may have a most varied distribution, but as a matter of clinical fact it seeks by preference certain localities. These are especially areas of hyperesthesia under the breasts, so-called "inframammary tenderness" and areas of hyperesthesia above the groins, grossly misnamed "ovarian tenderness." These areas of hyperesthesia are sometimes found on both sides of the body; more freqently, however, they are limited to one side of the body, and, curiously enough, like the hemianesthesia, they are found most frequently upon the left side. Areas of hyperesthesia are also frequently found upon the scalp, and here the patch is often so small that it can be covered with a finger-tip.

Not infrequently these areas of hyperesthesia become areas of hyperalgesia. The areas are not only tender but they become painful, not only painful to touch, put spontaneously painful. A familiar instance is found in the hyperesthetic area upon the scalp, which, when spontaneously painful, gives rise to severe headache, that form of headache known as clavus hystericus. What is true of the hyperesthetic area of the scalp is also true of the hyperesthetic areas about the breast, which when painful give rise to mastodynia.

That both clavus and mastodynia are affections attended with much suffering no one will deny. When the area of hyperesthesia in the inguinal region becomes painful the suffering may be equally great. Owing to the anatomical relation which the inguinal region bears to the ovary this symptom has been greatly misunderstood. As already stated, it has been misnamed ovarian tenderness, and has been directly attributed to the ovary, and yet there can be no doubt with regard to the nature of this pain, for we must remember that it is quite frequently found in men and also in women in whom the ovaries have been removed, removed sometimes in a vain attempt to relieve this pain. The pain is not ovarian; it should never have been called ovarian. Inguinal tenderness, groin pain, or, as I prefer, inguinodynia, are terms much simpler and in strict accordance with facts. The pain is, as a rule, confined to a limited area,

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and is found most frequently upon the left side, and is very often associated with a similar, though somewhat larger, areas of tenderness beneath or over the left mammary gland, and it need hardly be said, also, with other definite, well-marked hysterical stigmata. As a rule, it is revealed by careful examination to be superficial and not deep. It is situated in the skin and the tissues of the abdominal wall, and not within the pelvis. I have frequently demonstrated this to be a fact by means of the following procedure:

The painful area having been carefully localized on the abdominal surface, the tip of the forefinger of the right hand is allowed to rest lightly upon it; the left forefinger is then introduced into the vagina and directed upward and to the left until its tip is immediately beneath the tip of the forefinger of the right hand which is upon the abdominal wall. Just as soon as pressure is made between the two fingers, the patient flinches, while the patient does not flinch when pressure is made in other directions or when other portions of the abdominal wall are included. By this means I have succeeded not infrequently in isolating and demonstrating beyond a doubt the site, and therefore the character, of the pain. In some cases, just as in spinal tenderness, the pain radiates and becomes somewhat diffused, but it always radiates from a superficial center in the abdominal wall, and just as there are cases of spinal tenderness in which the tenderness is at one time superficial, and at others deep, so there are cases of inguinal tenderness in which the tenderness seems at times to be deep-seated; but even here, by the procedure I have described, the maximum point of pain can always be isolated and shown to exist in the abdominal tissues. To these considerations we will presently return.

I will not pause to speak of the contracture of the visual fields in hysteria, nor of the reversal of the color fields, as they do not in this evening's discussion directly concern us. They must, however, be borne in mind as affording valuable corroborative evidence of the existence of hysteria. The motor symptoms of hysteria are less frequently met with than the hysterical sensory disturbances which we have just considered. The motor symptoms consist in brief of paralysis, contracture, tremor, and in incoordination. Motor symptoms so striking as these generally cause the case to be referred to the neurologist rather than to the gynæcologist, and I will therefore not pause to consider them. Similarly with the visceral symptoms, which consist of disturbances of digestion, of the circulation, of the heart, of respiration, of fever, of cough, of loss of voice, of yawning,

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of phantom tumors, etc. They also are less likely to come before gynæcologists for interpretation, and are so characteristic as to stamp the case at once as hysterical.

The psychic symptoms of hysteria are, however, important for the gynæcologist. There is always some abnormality of the mental faculties in hysteria, more particularly a hyperesthesia and irritability of the affective faculties. The patient is, as a rule, exceedingly impressionable, and reacts inordinately to impressions involving the affective faculties. She is abnormally sensitive to suggestions, especially with regard to her physical condition, and willingly accepts explanations attributing her symptoms to local disease. Not infrequently hysterical symptoms are brought to the surface, or, if present, are made prominent by the ill-considered statements or injudicious interest manifested by the patient's friends. It can be readily seen how doubly injurious under such circumstances incautious statements by a physician, or a pelvic examination, even when the latter yield a negative result, may be. I have on a previous occasion expressed my views concerning this matter as follows: "One can hardly judge of the enormous mental impression a first examination must make upon a young girl, especially if that girl is already hysterical, already neuropathic by heredity and predisposition. Not only is the great evil of the moral shock to be taken into account, but the fact that there is lodged in the patient's mind a more or less vague but fixed belief that she has some mysterious local disease to which she only too willingly agrees to attribute her nervous manifestations. In consequence, she sooner or later insists upon a repetition of the examination or a continuance of the local treatment once begun, and the morbid idea thus implanted becomes hopelessly rooted, never, perhaps, to become displaced." The enormous rôle which the mental condition in hysteria plays must constantly be borne in mind. It is for the reason of this large psychic element that I term hysteria the psycho-neurosis in contra-distinction to neuresthenia, which is properly termed the fatigue neurosis.

The foregoing considerations of neurasthenia and hysteria warrant the following almost self-evident conclusions. First, regarding neurasthenia:

1. That neurasthenia may exist independently of any local disease, pelvic or otherwise.

2. That there is no *necessary* relation between neurasthenia and pelvic disease when the two affections happen to co-exist in the same case.

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3. That when pelvic disease occurs in a case of neurasthenia, the pelvic symptoms may be more readily recognized by the patient, and, therefore, become more prominent; because in neurasthenia there is an increased reaction to local impressions, nervous weakness, and nervous irritability going hand in hand.

Secondly, as regards hysteria the conclusions appear to be:

1. That hysteria may exist independently of any local disease, pelvic or otherwise.

2. That there is no relation between pelvic disease and hysteria, even when the two affections co-exist in the same case.

3. That while in hysteria there is increased reaction to external impressions, this reaction is purely psychic. To repeat the words used by me earlier in the evening, in hysteria the patient is exceedingly impressionable and reacts inordinately to impressions involving the affective faculties. This reaction to external impressions differs altogether from that seen in neurasthenia, for in the latter the reaction involves the nervous system as a whole. In hysteria the patient readily accepts the suggestion—often a spontaneous auto-suggestion—of pelvic disease, especially as groin pain or inguinodynia is so common a symptom of hysteria.

4. That the pain areas of hysteria bear no relation to disease of the deeper structures.

How shall we apply these conclusions to questions of pelvic surgery?

First, all idea of curing neurasthenia or hysteria by operations upon the pelvic organs must be absolutely abandoned. Happily the day has almost gone by when such operations are attempted. Healthy organs are no longer removed in the vain and grotesque attempt to relieve the symptoms of the neuroses.

Second, when confronted with pelvic lesions occurring in women presenting nervous phenomena, the surgeon should bear in mind that there are, leaving out the insanities, three groups of nervous symptoms which such patients may present; first, those of neurasthenia; secondly, those of hysteria, and thirdly, those directly due to and symptomatic of pelvic disease.

The symptoms of neurasthenia and of hysteria we have already considered. Those of the third group, those symptomatic of and directly due to pelvic disease are admittedly small in number. They consist of pains within the pelvis itself, pains referred to the lower portion of the back, to the sacrum, to the hips or thighs, and very rarely of sacral neuralgia and pain in the sciatic distribution.

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It is important for the surgeon to keep these three groups of symptoms clearly separated in his mind and to remember that when pelvic disease complicates a case of neurasthenia or hysteria, he cannot hope by operation to remove the symptoms characteristic of the neuroses, but only those symptoms properly belonging to the pelvic disease itself; and his operation should never be undertaken for any other purpose. To state the truth in other words, the surgeon should operate for the pelvic condition itself. For instance, if he operates on a tear of the perineum, he does so because the tear has resulted in mechanical difficulties—because it has given rise to a displacement of the uterus or perhaps to a rectocele, not because the tear occurs in a neurasthenic or hysterical woman. If he removes an ovary it is because the ovary is unmistakably diseased. If he removes an appendix, it is because the characteristic symptoms of appendicitis are present, and not because the patient suffers from neurasthenia or hysteria. If he sews fast a movable kidney, he does so because the mobility of the organ is such as to threaten mechanical obstruction of the ureter with its consequent hydrops of the kidney, or because the patient suffers from irregularly recurring attacks of gastro-intestinal cramp directly dependent upon the abnormal mobility of the organ, and not because the patient suffers from neurasthenia or hysteria.

Admitting the correctness of this position, the surgeon should approach cases of neurasthenia and cases of hysteria somewhat differently. Contrary to what might, perhaps, be inferred from the general tenor of my remarks, I believe that in neurasthenia operations for the cure of actual pelvic lesions are indicated and should, other things equal, be performed. We remember that in neurasthenia there is added to nervous weakness, nervous irritability; that there is an increased reaction to local impressions, and I maintain that it is just as proper and just as clearly indicated to correct local pelvic disease in neurasthenic patients as it is to give such patients glasses to relieve their ocular symptoms. It is important, however, in considering operations upon neurasthenics to bear in mind that these points are excessively sensitive to nervous shock. All gynæcologists are aware of the persistent nervous symptoms—the persistent surgical neurasthenia that ensues now and then after pelvic operations in otherwise healthy people. If such operations be undertaken upon persons already neurasthenic, great harm may be done. Therefore, if in a case requiring pelvic operation neurasthenia be present in any degree (provided, of course, that the operation be not urgently indicated for surgical reasons) I believe that the patient

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always does better if the operation be preceded by a period of rest, forced feeding, bathing, massage, etc.; in other words, by some form of rest treatment, or, as I prefer to term it, physiological treatment, adapted to the case. It is my own plan to disregard the pelvic lesions (unless these be urgent) of neurasthenic patients until, by a proper course of treatment, the nervous features have been eliminated, then to call in a surgeon and if, in the opinion of the latter, an operation is indicated, to have the operation performed.

If the patient instead of being neurasthenic be hysterical, a similar plan should be adopted. We should first treat the hysteria, and then, if necessary, submit the patient to operation. If the hysteria be very profound, however, operation, I am convinced, should never be undertaken unless the surgical indications are urgent and of such a character as are necessary to save life. I have in more than one instance seen an otherwise curable case of hysteria converted into a hopeless and incurable one by an injudicious operation. It is in my experience a recurrent observation that women suffering from pronounced hysteria, who are submitted to operation, return to the surgeon complaining of additional pelvic troubles and are again submitted to operation, and this cycle may be repeated a number of times. I recall one case in which a woman at first had both ovaries removed; subsequently, because her nymphæ were rather large and projected beyond the labia majora, she ascribed all of her troubles to them and at her solicitation they were amputated. Subsequently to this she ascribed all of her troubles to her rectum, and finally the sphincter was cut. Some time after this she came under my care and almost immediately begged me to examine the rectum, asserting that she was sure that a further operation was required. It is needless to say that by this time her hysteria had degenerated into a true psychosis and she proved to be hopelessly incurable. I mention the case because it is not impossible that some of the members of the Obstetrical Society can duplicate this experience. We should remember that in hysteria the psychic make-up of the individual is always profoundly involved; that there is (as I have already expressed it) an inordinate reaction to impressions involving the affective faculties—an inordinate susceptibility to suggestion. In reply to the statement that may be made that operations upon hysterical women sometimes cure the hysteria by suggestion, I answer that it has not been my fortune to witness such a result.

I have already trespassed on the time of the Society or I should be glad to make some remarks on the relations between pelvic dis-

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ease and the insanities, but the line of thought that I have pursued in considering the great neuroses indicate, in a large measure, my general point of view.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, June 2, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

Relation of the Great Neuroses to Pelvic Disease.

BY F. X. DERCUM, M.D.

(See page 180.)

DISCUSSION.

Dr. E. E. MONTGOMERY: I am sure we all feel well repaid for devoting the evening to the subject so ably presented to us by Dr. Dercum, and under obligation to him for the manner in which he has presented it. With the greater part of the paper I have but little to take exception. I think there are but few gynæcologists today who look upon the subject fairly and squarely that would consider the operative procedure necessary unless there could be discovered actual diseased conditions which were apparent, and consequently demanded operation. The existence of pain in localized areas, as described by the reader of the paper, has without question in the past been considered as a justifying resort to surgical operation, but rather with the experience of doing injury instead of improving the condition of the patient. I can remember a number of cases which have come under my observation at different times where women had been subjected to operation, and I had reason to believe from the history given that there was no special disease present in the organs removed, operation having been done for symptomatic rather than pathological condition. In such cases the results have been bad. I have seen one such patient two or three times who was continually confined to bed, constantly dwelling upon her symptoms, markedly hysterical, and no operation would be of service. It is a question whether even the neurologist would now be of any service to her. In one statement, however, it seems to me that the neurologist offends in another direction; that he looks at the shield from his side and pronounces the victim one who should

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be subject to his treatment and consideration alone. I have seen numbers of cases suffering from marked displacements of the uterus, extensive laceration of the cervix, complete eroded and granular appearance, enlarged ovaries, not only enlarged ovaries, but ovarian tumors, fibroid growths in the wall of the organ, and conditions of this kind which were treated by the neurologist without any consideration of the local symptoms. It is true that many of these patients suffer from neurasthenic symptoms, but as this fatigue neuroses is the result of lowered vitality from some cause, may it not be probable that the irritation induced by the local disease is the origin of the neurasthenic state, with the continued drain of profuse leucorrheal discharge, of irregular and profuse menstruation, of the disturbance arising as a result of continued irritation of inflammatory trouble of the uterus, of distress that must be the result of inflamed organ in the displaced position. It may be the cause of the breaking down of the nervous system, denominated as fatigue neuroses. It seems to me in such cases where it is evident that such conditions exist which must be deleterious to the health of the individual, the first consideration should be to remove the cause, if we can place our hands upon the diseased condition which is so apparent as to render it probable that it is a causative factor. I have seen numbers of cases in which the symptoms the Doctor has so ably presented regarding the neurasthenic condition are present, which have been subjected to operation and followed by generous feeding, by careful attention with prolonged rest, and the symptoms have entirely disappeared. Convalescence has possibly been a little slower than usual, but she has gotten well of nervous manifestations, has taken her place in society, and become a useful member, without being subjected to rest treatment farther than what I have suggested in the way of more nutritious diet and more careful seclusion during her convalescence. The only point in which I would feel like differing from the author of the paper would be in the value to be placed upon those symptoms in which we are able to determine active and definite causes for the disordered condition. In such cases I should say the operative treatment should be the important factor, should be considered early, and the patient would thus be saved long treatment and the expense of the rest treatment.

Dr. Anna M. Fullerton: Dr. Montgomery has already very fully expressed my ideas. I am sure we are all much indebted to Dr. Dercum for having so clearly presented the ideas he has concerning the relations between diseases of the pelvis and the great

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neuroses. Those of us who work in gynæcology have frequent occasion to observe that a nervous break-down in women is often accompanied by symptoms apparently due to pelvic disease, and, therefore, misleading. A sense of great weariness, nervousness, wakefulness, inability to walk any distance, a bearing-down feeling, headache, napeache, backache, cold feet, irritable bladder, spinal tenderness, pain in one or both ovaries, dysmenorrhea, low spirits, dyspepsia, bad dreams, nightmares, and night-terrors, offer a picture we all recognize.

It is easy to understand how organs, functionally as exacting as the reproductive organs are, should be profoundly impressed by the nervous and vascular disturbances which form the essence of nerve exhaustion.

The actual exclusion of a local cause for such manifestations can only be determined by a careful and intelligent examination; and this I think should be accorded the patient when marked local symptoms exist.

The absence of any gross manifestations of local trouble is not sufficient to exclude the possibility of the existence of some pelvic disorder which may serve as a source of irritation to the nervous system. Thus a peri-ovaritis, a cystic condition of the ovaries, the existence of ovarian hematoma, or even sclerotic changes in the ovary are capable of producing great pain; and pain we know is demoralizing to all the functions of the body through the effect it produces on the nervous system. Persistent pain, if it cannot be relieved by palliative or tonic measures is, to my mind, sufficient cause for active interference, even though the local lesion in the organ which is the seat of pain, may not seem an aggravated one.

Again the anemias and toxemias so often associated with, and, in reality, the direct result of pelvic disorders, are in themselves capable of producing nervous exhaustion through the perversions of nutrition they induce. Hemorrhages, constipation, pus in the pelvis, malignant degeneration, must, of necessity, affect the character of the blood, and, through it, the nervous system.

We make a mistake as gynæcologists, perhaps, in sometimes promising too much as the result of the local treatment of pelvic disease. We certainly need to give due heed to the claims of the patient's general condition, treating, not the pelvis alone, but the woman as a whole.

In summing up the results of his experience Dr. Goodell said, in one of the last articles penned by him: "From a large experience I

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humbly offer to the reader the following watchwords as broad helps to diagnosis. In the first place, always bear in mind what another has pithily said, that 'woman has some organs outside of the pelvis.' *Secondly.* Each neurotic case will usually have a tale of fret or grief, of cark and care, of wear and tear. *Thirdly.* Scant or delayed or suppressed menstruation is far more frequently the result of nerve exhaustion than of uterine disease. *Fourthly.* Anteflexion *per se* is not a pathological condition. It is so when associated with sterility or with painful menstruation, and only then does it need treatment. *Fifthly.* An irritable bladder is more often a nerve symptom than a uterine one. *Sixthly.* In a large number of cases of supposed or of actual uterine disease which display marked gastric disturbance, if the tongue be clean, the essential disease will be found to be neurotic; and it must be treated so.

Seventhly. Almost every supposed uterine case characterized by excess of sensibility, and by scantiness of will power is essentially a neurosis. *Eighthly.* In the vast majority of cases in which the woman takes to her bed and stays there indefinitely, from some supposed uterine lesion, she is bed-ridden from her brain and not from her womb. I will go further and assert that this will be the rule, even when the womb itself is displaced or it is disordered by a disease or by a lesion that is not in itself exacting or dangerous to life. *Ninthly.* Groin aches and sore ovaries are far more commonly symptoms of nerve exhaustion than of disease of the appendages. *Finally.* Uterine symptoms are not *always* present in eases of uterine disease. Nor when present, and even urgent, do they *necessarily* come from uterine disease, for they may be merely nerve-counterfeits of uterine disease."

I think that these views express the opinions of many of us in regard to neurosal symptoms. They may or may not find their source in the pelvic condition. We must meet the demands of the nervous system by treatment directed to its restoration—and for this simply local treatment may be insufficient.

Dr. Edward P. Davis: I have listened with great pleasure to Dr. Dercum's paper, as I am sure we all have. In my own experience several forms of neuroses have seemed to have direct bearing upon pelvic diseases. There are chronic neurasthenic women who do not develop normally in the pelvic structures. Dr. Dercum may recall a case he saw with me in consultation some years ago of a young girl imperfectly developed cerebrally, who had also marked lack of development of the pelvis and whose labor was characterized

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by a marked surgical shock from which she recovered with considerable difficulty. She has been for some years in the insane wards of the Philadelphia Hospital where she is at present making a very gradual recovery. She was not only a neurasthenic but has a contracted, ill-developed pelvis, with ill-developed womb, and also a psychical neuroses added to the original condition. Then we have psychic neuroses developing in pregnancy and labor, or, rather neurasthenic conditions arising in just such patients as Dr. Dercum has so well described. There is, however, in these patients, owing to the neurasthenia, a very strong psychic element, and I believe it is to the intensely depressant influence of the psychic element that we must ascribe at times some very serious conditions One of these conditions is not only prolonged labor, but distinct surgical shock of extraordinary degree. A second condition is secondary temperature, developing from twenty-four to forty-eight hours after birth of child without known anatomical cause. This brings to my mind a case, occurring in the middle of the night in a hospital where a young, frightened, neurasthenic girl delivered thirty-six hours before, was discovered bleeding: the most active stimulation was required to check hemorrhage and bring back tone to the system. Another was a patient who died of pulmonary clot. One element in the neurasthenic condition of this patient was a profound mental psychosis. She previously visited a fortune-teller who had foretold her death. It was impossible to persuade her she would live, although she rallied from shock, subsequent heart-clot carried her to her death. Persistent nausea in women during pregnancy is held by some authorities to be a pure neurosis. This is a very remarkable condition and would come under the head of neurasthenia and hysteria as described by Dr. Dercum. In the toxemias both in the pregnant and non-pregnant woman, we have the extraordinary history of neurasthenic symptoms, usually which cannot be solved by pelvic surgery or treatment, unless toxemia is taken distinctly into account. Here the successful gynæcologist must be not only a neurologist but a medical man as well, if he is to deal with these cases. It is the entire metabolism of the body which must give solution to this problem. We have only to call attention to extraordinary headaches of some of these patients. They may have pelvic disorders as well; one can perform oophorectomies without relieving the headaches, nor can any one cure them except when he comes to the toxemia which is causing them. In some cases of eclampsia we have symptoms counterfeiting hysterical symptoms. We occasionally see in

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pelvic pain a purely gouty condition referred to the pelvic organs. A patient was recently sent to me by a medical man, and on examination I found the usual changes in a woman of her age, namely, atrophied uterus, a womb slightly torn in parturition, and pelvic floor somewhat torn and relaxed, but which did not require attention. When her case was looked into it was found that a condition of gout was at the bottom of this trouble; the patient was almost sure that she had a severe pelvic disorder and her physician was unwilling to treat her until the examination was made. Patients in whom hysterical psychoses are well developed should be examined under anesthesia. I believe that none of us who see these women as patients can dispel more quickly the idea that a pelvic condition exists demanding operation than by a thorough examination under ether. I recall a woman who distinctly alleged that she had an offensive vaginal discharge and feared that it might make her domestic life a burden to her husband. In spite of testimony of trained nurses she still believed in this discharge which did not exist. She was having applications made, counter-irritation, etc.; it was not until anesthetized and assured beforehand that if anything was wrong that it would be repaired, that when she awoke from the anesthetic the belief in this discharge had passed away. This was supplemented by tonic treatment, but the effect of examination under anesthesia was very pronounced. I think the truth Dr. Dercum teaches us has been borne in upon the minds of the gynæcologists who attended the recent meeting of the American Gynæcological Association in Boston, where, in the discussion the fact was emphasized that gynæcologists must unravel the entire organism so far as he can before asserting that he has cured his patient. It was very extraordinary to hear the statement made by a number of gentlemen that they believed more cases had been cured by the necessary rest in bed and gentle purgation after the operation of ventro-suspension of the uterus for retrodisplacement than were relieved by the operation itself. While we may not agree with them, the fact is this, that certainly we are coming more and more to appreciate the facts brought out by just such excellent papers as Dr. Dercum has given this evening.

Dr. George Erety Shoemaker: While greatly interested in the paper by Dr. Dercum on this very important subject, I had hoped that he would devote attention chiefly to the strict relation between the conditions under discussion rather than to the neurosis proper, which are well understood. It must be admitted that there are very many pure neuroses with simulated pelvic disease. It must also be

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admitted that there are cases of pelvic disease which do not develop neurotic conditions; but to take the ground that when pelvic disease and a neuroses coexist in the same patient there is no relation between them is to take an extreme view. While I am heartily in accord with much that Dr. Dercum says about the mimicry of pelvic disease, it seems to me that hiss tatement that there is no relation between hysteria and pelvic disease is only a partial truth. Granted, an individual with heredity which predisposes to functional nervous disorder, or a nervous system that is excessively irritable and easily thrown out of balance, and why may not the long-continued bleeding from a uterine polypus, or the persistent pain from an anal fissure lasting months or years, be a potent cause of impairment of vital forces, and secondarily of the development of hysteria? Why may we not save blood by tying hemorrhoids, before trying to make blood by rest-cure methods; of inestimable value afterward? Where both a neurosis and a gross pelvic lesion are present I usually proceed to cure the pelvic disease, and then bring to bear every other available method of treatment for the building up of the general health. There are no conditions under which one could ever say that he was operating for hysteria. He must operate for a definite lesion, and whatever improvement is obtained in the neurosis, is indirect. As to the diagnosis of the true value of excessive sensibility and tenderness in the abdomen there should be no difficulty. An anesthetic should be given in doubtful cases. The rule scarcely admits of exception that no operation or local treatment is required in nervous cases for a cause which cannot be demonstrated under ether. The criticism is sometimes made that gross pelvic disease does not accompany nervous disturbance. This is a partial truth as I have shown by reported cases of slowly forming cancer and of pelvic abscess. The course of cancer of uterus is, however, so rapid that ordinarily there is no time for the development of the remote effects of long-continued moderate pain and hemorrhage which are potent factors in undermining the nervous system. Within one or two years from the time that cancer becomes a depressing factor at all the patient is overwhelmed by gross features of the disease, or has died. It seems to me every physician should endeavor to remove persistent definite pelvic disease as he would any lesion in any other part of the body, with the hope that secondarily the general health of the patient may be built up, and the nervous symptoms may be lessened. I am opposed to pelvic treatment or operation for nervous disorders *per se*,

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and constantly and consistently endeavor to avoid and to prevent them.

Dr. LONGAKER: I had the great misfortune of hearing only the latter part of this paper. I would like to refer as well as I can from memory to some recent statements made by a very prominent alienist on this subject. I refer to the presidential address of Dr. Bucke, who stands high among the American alienists. Dr. Bucke cites a large number of operationswhich have been done in the insane-asylums in London, Ontario, with very beneficial results. He speaks with hopefulness, indeed with enthusiasm upon this. All of us have had under our observation women who years ago have had ovaries and more or less of their entire reproductive organs removed, and we see them in a deplorable condition. I think it is rash in many of these cases to jump at the conclusion that an operation has been at fault. Only to-night a woman was in my office, who detained me, who nine years ago had her ovaries removed, and she has had a history of discomfort ever since that. She has had eighteen doctors and spent a small fortune since. It is quite to the point to remember in this case when she tells her whole history, that she has been leading an entirely abnormal life, the greater part of it being spent in a brothel. It would be strange if such a woman did not develop an incurable psychosis not due to the operation at all.

Dr. J. M. BALDY: I will say a few words on this matter with a good deal of pleasure. I do not know when I have had a subject presented more in accord with my own feelings and views unless it was in the excellent discussion given by Dr. Dercum before the College of Physicians a year ago and covering practically the same ground. In both these discussions he brings out prominently the practical application between the neurological condition and the practical gynæcological standpoint. The whole point comes down to this: there are gynæcological and neurological conditions, and that they overlap and that they exist in the same patient, and how are we going to tell which are due to neurotic and which are due to practical gynæcological causes; it takes a well-rounded out physician to make the distinction satisfactorily. The larger part of the profession do not make that distinction, as is indicated by the cases they send to us for operative interference. It is true, unquestionably, that large numbers of gynæcological patients suffer from neurological symptoms, call them hysteria or neurasthenia as you choose; we can group them all under the head of neurological. Unquestionably this class of symptoms

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do exist in a large number of gynæcological cases, but just as surely they exist in a larger number of cases where gynæcological lesions do not enter. I mean by that I have a patient, the wife of a prominent doctor, with a retrodisplacement of uterus, with prolapse of ovaries, which has existed for years; had twenty-five years ago a small laceration of cervix; she has never had any practical trouble at all until the last twelve months. She is now undoubtedly suffering from neurasthenia; unquestionably she would be put down as a gynæcological patient by many simply because she has a retrodisplacement and laceration of the cervix. Investigation will, however, show that these lesions have existed for years and that she did not have nerve symptoms before. Why put her in the gynæcological group? It is perfectly clear neurasthenia has supervened in the meantime and in this case is entirely independent of the pelvic lesions. Cases of that kind are common and I could produce hundreds from my practice.

So it is in ovarian tumors and fibroid tumors, to which attention has been called. Because fibroid tumors exist it does not necessarily follow that any neurological conditions present are due to the fibroid tumors. We have well-known local clinical symptoms produced by fibroids, and neurasthenia or hysteria is not usually one of them. I see many cases of that kind; fibroid tumors may have neurasthenia accompanying them, and they may be just as surely neurasthenics and not suffer from the fibroids, in spite of the existence of the fibroid tumor. So it is with cancers. Cancers exist two years, four years, and six years; ovarian tumors exist five and twenty years; and fibroids indefinitely, without neurasthenic symptoms; and this is the rule, not the exception. It is, therefore, nonsense for us to pretend to say that these graver symptoms do not exist long enough to cause these neurasthenic symptoms. If neurasthenia was a legitimate symptom of these grave lesions we would see it more commonly. Further, the local lacerations of the perineum and cervix are not of any more consequence than laceration of the ear, which our grandmothers used to have from wearing hoop ear-rings, as far as nerve symptoms are concerned. It seems to me that such teachings should not be allowed to go undisputed from a society of this character. There is no more reason in the case of a patient suffering from a fibroid and neurasthenia, that operation is imperative on account of the neurasthenia, than that a person who has a corn should have the toe amputated because the corn is accompanied by neurasthenia. The probability in both cases is largely in the direc-

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tion of the neurasthenia being independent of both fibroid and corn. I believe the plainer we talk on this subject the sooner we are going to come to a conclusion which is correct; these have been our conclusions in the past. Again, in insane cases: I do not believe there is a case in an asylum to-day which exists or originated on account of pelvic disease. I have seen cases in asylums, examined them for pelvic lesions simply because they had profuse menstruation, because they had pelvic or abdominal pains—cases in which the friends have asked me to do so, with convicion that pelvic disease was at the bottom of the trouble—and in no case was the insanity in the slightest degree due to local pelvic condition. It is true the pelvic condition in insane patients should be treated in the same way that we would treat sane patients, but it does not follow because they have these local conditions that their insanities are due to that cause. Take the investigations of Rohè, who has operated upon a number of such cases. He reports cures in four out of some thirty operations. These four were cured in that class of insane patients who are almost certainly cured by rest: in puerperal cases.

The cases brought out in the discussion at the American Gynæcological Association were mostly neurasthenics. More of these cases in which hysterrorrhaphies are done are cured by rest in bed, proper feeding, proper treatment, departure from their unhygienic surroundings at home, than by the operation; three-fourths of them are neurasthenics in the beginning. If you had incised their skin and put them to bed for four weeks they would be as well as they are following the hysterrorrhaphy. As a matter of fact, numbers of these uteri become retrodisplaced after operation.

Take the cases of Polk in the Bellevue Hospital, a precisely similar class of cases: displacements, hydrops folliculi, small cysts, etc. What is a hydrops folliculi? It is a perfectly normal condition. Every ovary you ever saw has one or more hydrops folliculi. That is Nature's method of getting rid of Graafian follicles. To burn them, as Pozzi does, or puncture, as Polk does, and report patients cured, is nonsense. They are neurasthenics from the beginning; if put to bed they would be cured in exactly the same ratio. Take our almshouse class of patients, our slums—underfed, beaten, overworked, abused sexually, in every possible way living unhygienically—and what will you expect? They have an operation and are put in the hospital in a clean bed; they are cured; they are sent out, and in three months or six months they are just as bad as before they went into the hospital. So it is with laceration of the cervix;

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it is a definite lesion; it gives definite, well-marked local symptoms, due to the lesion and easily explainable; but not reflex symptoms, such as eyeache, headache, toeache, or backache which is unexplainable, excepting by calling them reflex—reflex nonsense!

The symptoms of gynæcological lesions are definite, they are easily explained where the patient has a gynæcological lesion, and if the symptoms are such that they cannot be attributed to that class of lesion, and are of a nervous character, in ninety-nine out of one hundred cases the woman is neurasthenic and had better be let alone as far as the knife is concerned.

Leucorrhea being a serious drain to a patient's strength is one of the myths of gynæcology. I do not believe it is any more of a drain than so much drainage from buccal glands, which is swallowed. As a matter of fact I do not believe it is ever a factor in this direction, except as far as it depresses mentally by its mere presence; that is, by the annoyance of it or the acquired idea that it is a drain to the system—and even then, probably, some doctor is responsible for putting the idea in the patient's head.

Dr. G. E. Shoemaker: I intended to say in my previous discussion that I believe in any any case that is liable to neurotic disturbance, the removal of both ovaries is a grave feature of the life history; and when operating for ovarian disease, some ovarian tissues should, if possible, be left. Every effort should be made to study cases thoroughly before anything is done. An operation should never be undertaken for a flexion or version of the uterus unless it is demonstrated that it has some relation to the disability of that patient. This can usually be done by packing or supporting temporarily that displaced organ without the knowledge of the patient. It will frequently be found that the patient cannot tell the difference whether the retroverted uterus is replaced or not. When it is demonstrated that it does have a decided effect upon pain and distress, an operation, as conservative as possible, is advisable. I have two cured cases of well-marked neurasthenia where a badly descended uterus has been proved by late results of treatment to have been a veritable thorn in the flesh.

Dr. Charles P. Noble: It must be interesting to us to see how nearly gynæcologists and neurologists agree. In cases where overlapping occurs, when both nervous disease and diseases of sexual organs are present, just as the neurologist is inclined to try first the rest-cure, so the gynæcologist is inclined to treat first the pelvic disease. The explanation is simple. Each has most confidence in what

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he knows best, and is inclined to exhaust his own resources before calling in assistance.

Dr. F. X. Dercum: I am exceedingly obliged for this full discussion. I have been very much gratified to learn of the unanimity of opinion. My object to-night was to point out two things: First, that symptomatology of neurasthenia is one thing, the symptomatology of pelvic disease an entirely different thing; secondly, that the symptomatology of hysteria is one thing and the symptomatology of pelvic disease another thing. A local disease of the foot and melancholia are two entirely different things, and yet may co-exist in the same case; surely because an insane man may have a fractured leg, we are not justified on attributing the insanity to the fracture. In regard to the remarks made by Dr. Montgomery, I pointed out first that an eye defect may exist for years and be unrecognized. When a man or woman becomes broken down by over-work the eye defect is discovered and an oculist is consulted and the patient is glassed. It is just as proper to remove local caused of disease anywhere else—just as proper to operate upon a neurasthenic woman under certain condition as it is to glass her. A neurasthenic woman may have a tear and not know it for many years, and it may only be when she becomes neurasthenic that the surgical condition obtrudes itself on her consciousness. Visceral sense impressions are in health all relegated to the unconscious field of the ego, and it is only when we are ill that these visceral sense impressions thrust themselves upon our consciousness and then this or that organ demands attention. But we should always remember that when we operate on a tear or some more serious trouble, we are not curing the neurasthenia, but only removing a possible cause of local irritation. I am thoroughly in accord with the remarks of Dr. Baldy, and he has stated my own position exactly.

In regard to the remarks made by Dr. Fullerton I am largely in accord, also with the remarks of Dr. Davis. The case he alluded to was distinctly a neuropathic case. In neuropathic cases we have a congenital or hereditary defect of nervous organization; in the neurasthenic cases we have an acquired disease with a well-fixed syndrome. There is no close relation between neuropathic and neurasthenic cases.

In regard to Dr. Shoemaker's statements, I dwelt especially upon the symtomatology of hysteria and neurasthenia in order to clearly present the fact that these two have a set of symptoms entirely distinct from pelvic disease.

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In reference to the statement made by Dr. Longaker in regard to the insanities, I answer that insanity is a barren field for surgery. It is well known that now and then the course of a case of melancholia changes after an attempt to suicide, or after any other surgical or other trouble, sometimes for the better, sometimes for the worse. The course of an insanity may similarly be modified by a surgical shock, but the outcome is always uncertain. More often the course is not modified at all.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

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SOME PRACTICAL REMARKS ON THE OBSTETRIC FORCEPS: A DESCRIPTION OF A MODIFIED SIMPSON FORCEPS AND ALSO A TRACTION INSTRUMENT.*

By D. Benjamin, M.D., Camden, N. J.

Obstetrician and Gynæcologist to Cooper Hospital, Etc., Etc.

Gentlemen of the Philadelphia Obstetrical Society: I appreciate very highly the honor of addressing you, and I should feel very sorry if I should waste your valuable time.

It might be asked, what could be said of the obstetrical forceps that has not been said? But since I have the pleasure of addressing gentlemen who are men of practical experience and ability, I have the privilege of avoiding the elementary discussions.

For my purposes to-night, the numerous obstetric forceps may be divided into five groups:

The long,
The short,
The slightly curved,
The much curved, and
The axis traction.

I think that any known forceps may be arranged under one of these groups. There are three forceps, however, that may be said to be the leading forceps, especially so far as Philadelphia teaching is concerned, and I presume that there is no teaching anywhere any better than that of Philadelphia.

To dispose of the long and short forceps—though volumes have been written upon their respective merits—I may say in two sentences that in treating a patient I can do anything with the long forceps that I can do with the short forceps, but I cannot do anything with the short forceps that I can do with the long forceps. Therefore, if I were to go to a case and were confined to one kind, I should surely take the long. The advantages of the long forceps have been frequently discussed, but they consist mainly in two points: a little more leverage and the blunt hook. So much for the long and short forceps.

Now, as to the curved forceps. There are two curves: one the

* Read. For *Discussion*, see page 215.

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pelvic, the other the cephalic. In speaking of the curved, I have reference more particularly to the pelvic curved. Here we have a moderately curved forceps, the Simpson (Fig. 2). We have the decidedly curved in the Wallace (Fig. 3). The Bethel forceps are more curved than the Wallace. The Hodge forceps are moderately curved, or a curvature between the Simpson and the Wallace. I have now mentioned the three leading forceps. There are very few comparatively of other kinds of forceps sold; and, in speaking of the curvature, I will call your attention first to the Wallace, and what I say of these will apply to all the other curved forceps. In applying these, we

Figs. 1, 2, and 3. 1, Benjamin's. 2, Simpson's. 3, Wallace's.

may better, perhaps, reach thoroughly a head that is high up in the anterior wall over the pubic bone, but when you have done so and attempted extraction, you are pulling against the pubic bone. Therefore, with curved forceps, axis traction becomes very important. The large fenestra in the portion of the Wallace near the handle enlarges the vagina and presses the points well forward. If these forceps slip, which they are liable to do, you immediately have the cutting of the anterior tissues, the bladder, and the tissues of the neighborhood. The aptitude of these forceps to slip is due to the cephalic curve, and what I say of them applies to all forceps which

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have that particular curve. The Hodge and Wallace, you see (Fig. 4), have exactly the same cephalic curve. These forceps will slip, and the reason that they slip is mainly that when they are sufficiently open to take a child's head the blades are almost parallel. By great pressure you can make them hold better, but you can see they are capable of dangerous compression because they come so close together. If you will compare [see Figs. 5 and 6] the Simpson curve with the curve of this class of forceps (Fig. 4), you will see there is little likelihood of endangering the child's head with the Simpson forceps or with the Benjamin forceps; the points do not come so close together,

Figs. 4, 5, and 6. 4, Hodge and Wallace. 5, Simpson's. 6, Benjamin's.

nor do the blades. The Hodge and the Wallace (Figs. 4 and 3), and that class of forceps, therefore, endanger the child and the mother—danger by compression in the case of the child, and by slipping in the case of the mother. The advantage, however, which the Wallace and Hodge, and that class of forceps, have is in the long handle and the hook, but the curves—the pelvic and cephalic curves—are not so good as the Simpson. That excellent teacher, Professor R. A. F. Penrose, I remember once remarked, that if you should throw the Simpson forceps at the patient they would go on. He was teaching that they were so easily applied that they were safe to mother and child—

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more so than others. I found that to be the truth, and I find to-day that the leading colleges and the leading teachers in Philadelphia are recommending the Simson forceps. I have asked prominent instrument-makers, who perhaps sell most of these instruments, and and they tell me that they sell eight of Simpson's to one of any others to-day, so they are growing more and more in favor, and that is due to these facts: that you can pull without their slipping. They apply themselves. There is no waste space. They are accurately adjusted to the child's head. You can pull as hard as you please, and should they by carelessness slip, there is not much curve to endanger the mother. They are very extensively used, but there is no advantage in the short handles, and in some cases they cannot be applied high up. The Hodge and the Wallace, and that class with long handles, can be applied high up, and while they are nicely aseptic you have the advantage of the hook. Sometimes the key is in the way, and sometimes it makes them rigid when it is screwed up tightly, so that the Simpson lock is the better, and has just enough

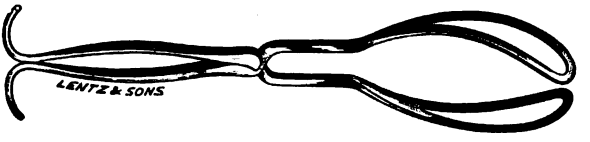

Fig. 7.

freedom in the joint to give the sensation to the hand of the child's head. The Simpson forceps handle cannot pinch the mother. These forceps will sometimes pinch at shank—these long forceps of Hodge and Wallace—but they can be used high up and you have the advantage of this handle.

After carrying both kinds for a while it occurred to me that I might have all the advantages of the Hodge handle combined with the Simpson blades, which are the correct and best curvatures. I, therefore, devised these forceps (Figs. 1, 6, 7, and 11), which you see are simply a modified Simpson, with exactly the same cephalic and pelvic curve, but they are longer in the shank. They have no obstructions; they have the Simpson lock and the Hodge handles. As an apt illustration of the importance of this change, I may mention an occurrence I had a few weeks ago. I was sent for to go to a town in a neighboring State, some fifty or sixty miles distant, to perform a Cæsarian section, and "come prepared." Among the instruments I threw into my satchel was this modified Simpson. When I

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got there I found that the child's head had presented and that the physicians—experienced men, one of them of thirty-years' practice, good obstetricians—had pulled the head off. I had not before met with a case where the body would not follow the head. They had pulled off the head of a large, strong child. Then, getting one arm down, they had pulled that off. The child then receded and they could go no further. The woman was in a very bad condition and could not have stood a Cæsarian section. Subsequent events proved that she would not. While preparing for Cæsarian section as a forlorn hope, and while I intended to do it if necessary, I tried to see what I could do in the way of delivering and succeeded in finding the sound shoulder. The woman had been torn and the rectum was lying in the posterior portion of the vagina. The woman was septic and you could smell the odor upon going into the

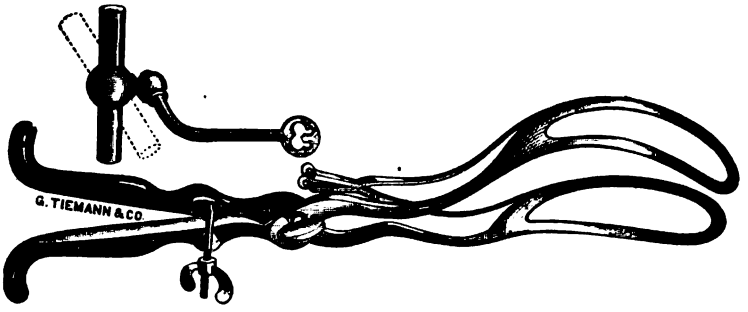

Fig. 8.

room, and she was sinking. With difficulty I found the sound shoulder, and if I had had the Simpson forceps they would have been no use whatever—the child could not be turned without great danger to the mother, if at all, two physicians having tried in vain for hours—but having the *modified* Simpson, I simply hooked the blunt hook over the shoulder and delivered the child, which could not have been done with the unmodified Simpson. I, therefore, claim that this modification of Simpson is not only an improvement, but claim that it is decidedly *the best all-round forceps in use.*

With curved forceps we use axis traction and there have been various devices for that purpose. Among them we have the Tarnier, expensive and complicated, heavy instruments. These forceps owe their action direct to the fact that the handle is bent down, because when the handle is bent down the line of traction is from the

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point where the traction is applied in the axis of the curved ends of the blades. Therefore, we can have axis traction, but in pulling upon this bent handle we put great strain upon these narrow rods which go to the blades, and the traction upon them is downward as well as forward, and could equally well have been applied through the strong handles, as they are attached to the blades.

The Jewett forceps are also complicated and have holes for the traction-rods. The rods pull in the same line as the handles, so that they owe their traction properties to the bending down of the handles.

An instrument was invented in England by Galabin that has the handle of the forceps bent downward at right angles, and Professor Hermann, Obstetrician to the London Hospital, and President of the

Fig. 9.—Galabin's Axis-Traction Forceps.

London Obstetrical Society, says emphatically that he cannot see any reason why they are not generally used except that they take up more room in the bag.*

There is one forceps that have a hinge by which the handle can be bent down and fixed at a right angle. I have not examined them. It occurred to me that if we could have an instrument that would give us axis traction neatly and easily at any time during the process of delivery, it would be convenient. I, therefore devised the instrument which I now show you. It can be applied easily,

Fig. 10.

at any time during the process of labor, to any of the ordinary kinds of forceps. You simply slip it onto the handles and you have axis traction. You have the axis traction with firmness and accuracy applied through the solid handles. You can remove it at any time. You can let go of the handles if you choose, because the friction in

* Hermann, "Difficult Labor," p. 371.

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these parallel rods prevents the forceps handles from opening easily, and you may apply it as long as you please, and, you see, since the

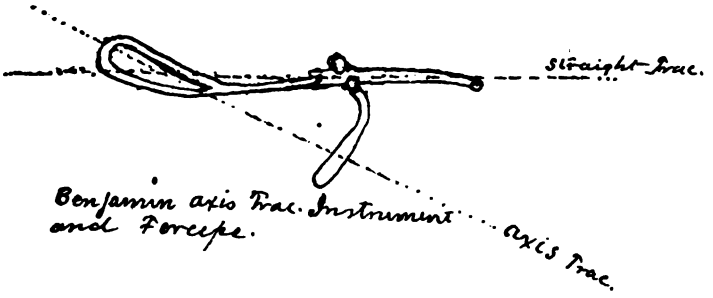

Fig. 11.

line of pull is in the axis of the bent portion of the blade or pelvis, it must necessarily, as a mathematical problem, be perfect axis traction. The instrument can be removed whenever you please, with-

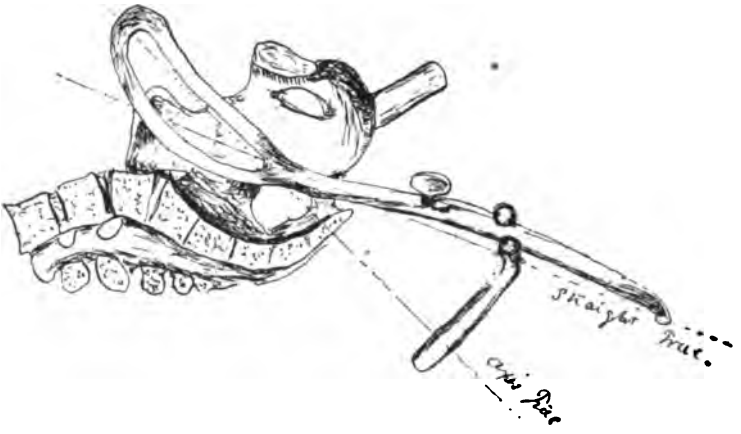

Fig. 12.—This drawing by D. Benjamin shows that when the forceps are applied at or above the superior strait the handle will be depressed so near the sacrum that no rods, unless bent at right angle to the handles, can make *axis* traction.

out removing the forceps. Of course, if you have these complicated forceps like Tarnier's, or the kind I have, with the tapes, they are not so convenient or neat. You can apply this instrument to any forceps, even to the short Simpson, and Fig. 12 shows how far back, even through the sacrum, you can carry your line of traction.

The first case upon which I tried the traction-rod was a very fat

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and difficult subject. The forceps were applied high up, but I had no difficulty whatever.

Fig. 13.

I, therefore, call your attention to these two instruments and hope that they will add something to our convenience and to the comfort and success of our practice.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, June 2, 1898.

(*Continued.*)

Some Practical Remarks on the Obstetric Forceps: A Description of a Modified Simpson Forceps; also a Traction Instrument.

By D. Benjamin, M.D.

(See page 207.)

Discussion.

Dr. R. C. Morris: The obstetric forceps is always an interesting subject, although an old one. The Doctor's remarks, practically, only offer an opportunity for exchange of ideas as to different types of instruments and their reliability. I listened with a great deal of interest to his remarks, and I was impressed, first of all, with his statement that with the long forceps he was able to accomplish all that he could accomplish with the short forceps, and that he was not able to accomplish with the short forceps all that he could with the long forceps. The only exception to that proposition which I should feel inclined to advance, is that the Doctor might not be as likely to save as many babies with the long forceps as with the short forceps, from the fact that the greater degree of compression likely to occur with the long forceps endangers the child. I think the great advantage of the Simpson forceps is that it saves more babies in a given number of operations than can be saved with the long forceps (such as the Hodge forceps) in the same number of average forceps deliveries. He also laid some emphasis on the value of the hook applied to the long handle of the instrument, which he has exhibited, as his modification of the Simpson forceps. I am agreed with the Doctor that an emergency may arise when the blunt hook will be of some value, but in my obstetric experience, which covers, in my hospital experience, 1100 cases in one institution, and a large number of deliveries in my private practice and consultation work, I have never found it necessary to use the blunt hook. The case in which Dr. Benjamin contemplated Cæsarian section, I think

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in my own hands would have been promptly delivered by version. It is important to bear in mind that the Simpson forceps is not constructed for the high operation. I think the doctor who would attempt to deliver the head arrested above the pelvic brim with Simpson forceps would find the extraction difficult whether the handle was short or long, because the blades of that forceps have not sufficient pelvic curve. My own practice is to use the Simpson forceps for the low operation, but never to use it for the high operation. When we come to the subject of axis traction, we are all agreed as to the absolute value of some form of axis traction to deliver when the head is high in the pelvis. Several years ago, like everybody else, I felt a desire to provide an instrument which would be an improvement on what had been created in this line. I foolishly undertook to modify the Tarnier instrument, and had an instrument-maker modify the Tarnier instrument. This modified instrument I soon abandoned, finding that while it helped delivery, it was very destructive to the babies. Then I learned that Tarnier himself had at least a hundred models made before he came to the conclusion that his last model was the best. With the Tarnier forceps shown to-night I have no difficulty when the high-forceps operation is indicated. As to the traction-rod invented by Dr. Benjamin, I believe that a certain amount of axis-traction can be thus secured. The principle is the same as that of a traction-bar which one of the instrument-makers in the city had the kindness to send me some years ago. By a similar mechanical contrivance, a bar is attached over the shoulder of the Simpson or other forceps. I tried it in several cases, and I came to the conclusion that you did not get the same amount of axis-traction as with traction-bars attached to the blades themselves. You use rather a prying force. A fulcrum is formed, around which the head is pried and is not pulled in the direction of the axis of the birth canal. It is not to be compared in my experience with the Tarnier instrument. I believe that one who is likely to do much obstetric work should always be supplied with two instruments, the Simpson for the low operation and the Tarnier axis-traction instrument for the high operation. Never departing from this rule, we will deliver more live babies than by any other means. I regret that other topics have not been presented for discussion, such for example, as the frequency, the indications, contraindications, and results of forceps deliveries. The frequency and the results of forceps delivery are no doubt determined by the individual's skill in the application of the instru-

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ment and by his aseptic or antiseptic technic. Oftentimes the forceps can be used not only for the mother's best interests, but unquestionably for the child's best interests. Studying the maternal results, it was an interesting fact for me to observe, in a series of cases in my first two years at the Preston Retreat that my forceps deliveries had better temperatures than the same number of cases taken during the same period that were delivered spontaneously. I am sorry that the Doctor did not consider other problems, but so far as his study of the instrument itself is concerned, his discussion has been exceedingly interesting and very valuable.

Dr. D. LONGAKER: I can duplicate almost in toto the experience of the last speaker in reference to the Tarnier forceps, and it is a very vital point in the discussion to-night, I think. My conclusion has been precisely the same as Dr. Norris's. I have adopted Tarnier's last model and have used it now for a number of years and would not think of using that modification which I myself had more or less completed some years ago. The last speaker did not mention the most vital point of all in the Tarnier principle; it is not the fact at all that we are making our traction somewhere approximately in the line of the axis of the pelvic strait, that I think, is a minor point, and is so recognized by all men who have studied this matter, certainly it was recognized by Tarnier. It is not the fact that traction is made approximately in a line parallel with this axis, but, that traction is applied through a movable point so that the force applied to the head leaves it perfectly free to move in the direction of least resistance. The free mobility, under the extracting force permitted to the head is the vital point. I have considerable feeling on this subject, and I do not like to see the Tarnier forceps spoken of slightingly because one can do with these forceps with advantage what cannot be done in any other way. I think the almost universal experience of those who have used various forceps and in a large number of cases is, as has been summed up by the preceding speaker, the Simpson forceps for the generality of cases and the Tarnier forceps for high operations.

While discussing the matter of forceps deliveries I think it is not out of place to lay some emphasis on the point of determining just what cases are proper for forceps, just what degree of obstruction, what degree of disproportion between head and pelvic cavity should permit one to think of this method of delivery. Certainly where in a given case the head can be felt high up, and with the exertion of a considerable amount of force (under anesthesia this can be carried

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out most satisfactorily) that the head can be pretty well pressed into pelvis, the anterior portion not projecting over the pubis, that case can be delivered. In this way degrees of disproportion can certainly be detected, which should impel one not to think of resorting to the forceps as a means of delivery; if the head projects well over the symphysis pubis, if it cannot be depressed and pushed down into pelvis, I doubt whether such a case is a proper one for forceps at all.

Dr. BENJAMIN: There occurred to me but two points mentioned prominently in criticism: One was that the short Simpson forceps would save more babies than long-handle forceps. In reply I would say if the Simpson forceps had a little longer handle, an inch or two, you have the power if you want it, but you have to use just enough of compression to deliver your case and you will not use any more with a longer handle than the short one, but you will use it with greater ease, and if the long handle, so universally used all over the country, and recommended by Hodge and other of our great teachers, would be dangerous with the Simpson curves, what could be said of the greater danger of the Hodge, the Wallace, and that class of forceps?

Now as to axis traction: There was one criticism made, namely, that the Tarnier permits the head to move. In answer to this I would say it would take considerable to move the instrument and the head cannot move without the instrument moves, nor will the movement of the head transmit itself to the sensations of the accoucheur through these movable handles so quickly as though the handles firmly attached, and therefore he cannot so intelligently apply his force with these complicated joints, chain movement, as he could if the sensation, with very little change, is communicated to his hand through a lighter, firmer handle. As to there being any better pulling point with these rods than with the bent handle, that falls to the ground for the reason that the whole traction is due to the bending of the handle, and if the force be transmitted through the handles, it is transmitted on a better basis than through additional rods. If these rods are bent backward to depress perineum then you simply have the effect of straight forceps, unless the handle is bent at a right-angle outside the vulva.

Dr. LONGAKER: Of course we do not think of making traction in that direction. In the Tarnier forceps the handle is the index which serves to show the position of the head, and in the directions for making extraction with that forceps we bear in mind the point insisted upon by those who introduced these forceps, to never bring

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the traction rods up against the handles or shanks, but allow about 1 cm. of play between the traction-rods and the handle, the handle serving only as an index to indicate the direction in which the extracting force is to be employed.

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FRANK W. TALLEY, *Secretary.*

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